

11 Manufacturers Report Total Sales of 909,055 Household Refrigerators During 1933

The following annual report of sales by 11 members of the National Electrical Manufacturers Association (Nema) is not the exact total of the monthly reports due to the revisions which have occurred.

Member companies of the Refrigeration Division of the National Electrical Manufacturers Association reporting sales include Crosley, Frigidaire, General Electric, Gibson, Grigsby-Grunow, Kelvinator, Norge, Servel, Trupar, Universal Cooler, and Westinghouse. Member companies not reporting sales are Apex Electrical Mfg. Co., Merchant & Evans Co., Potter Refrigerator Corp., Stewart-Warner Co., Sunbeam Electric Mfg. Co., Uniflow Mfg. Co., and Rudolph Wurlitzer, Inc.

HOUSEHOLD		WORLD SALES	
Lacquer (Exterior) Cabinets with Systems		Quantity	Value
1. Under 4.00 cubic feet.....	12,440	\$ 638,522	
2. 4 to 4.99 cubic feet.....	289,261	17,726,039	
3. 5 to 5.99 cubic feet.....	78,045	5,570,214	
4. 6 to 6.99 cubic feet.....	152,253	12,379,370	
5. 7 to 7.99 cubic feet.....	70,248	6,907,355	
6. 8 to 9.99 cubic feet.....	10,827	1,209,999	
7. 10 to 12.99 cubic feet.....	1,007	193,981	
8. 13 to 16.99 cubic feet.....	284	61,961	
9. 17 to 24.00 cubic feet.....	55	16,174	
10. Total Lacquer.....	614,420	44,703,615	
Porcelain (Exterior) Cabinets with Systems		Quantity	Value
11. Under 4.00 cubic feet.....	1,564	\$9,811	
12. 4 to 4.99 cubic feet.....	32,018	2,448,288	
13. 5 to 5.99 cubic feet.....	23,751	2,109,964	
14. 6 to 6.99 cubic feet.....	80,829	7,922,685	
15. 7 to 7.99 cubic feet.....	89,499	10,852,209	
16. 8 to 9.99 cubic feet.....	26,319	3,591,418	
17. 10 to 12.99 cubic feet.....	8,611	1,402,153	
18. 13 to 16.99 cubic feet.....	3,380	657,659	
19. 17 to 24.00 cubic feet.....	469	140,080	
20. Total Porcelain.....	266,440	29,214,267	
21. Total Lines 10 and 20.....	880,860	73,917,882	
22. Separate Systems.....	19,179	821,073	
23. Separate Household Low Sides.....	9,016	147,318	
24. Total Lines 21, 22, and 23.....	909,055		
25. High Sides Under 1/2 hp.....	13,260	550,087	
26. Cabinets—No Systems.....	2,825	160,287	
27.....			
28. Total Household.....		75,596,647	
COMMERCIAL		Quantity	Value
31. Water Coolers with High Sides.....	11,950	1,105,037	
32. Water Coolers with No High Sides.....	1,379	75,126	
33. Ice Cream Cabinets with High Sides.....	4,583	589,233	
34. Ice Cream Cabinets with No High Sides.....	3,997	480,457	
35. Milk Coolers with No High Sides.....	4	375	
36. Room Coolers with High Sides.....	91	29,436	
37. Room Coolers with No High Sides.....	2,571	252,675	
38. Extra High Sides, 1/2 hp. and Up.....	56,566	5,841,363	
39. Total Lines 31, 33, 36, 38, and 42.....	77,352		
40. Extra Commercial Low Sides.....	63,921	1,894,558	
41. Miscellaneous Cases and Cabinets.....	486	551,153	
42. Beverage Coolers.....	4,162	266,860	
43. Total Commercial.....		11,086,273	
44. Totals—Household and Commercial.....		\$86,682,920	

Frigidaire Puts on Show in St. Louis

ST. LOUIS—W. D. McElhinny led his Frigidaire factory barnstorming crew into action at a regional dealer meeting here Wednesday, Feb. 21, and put on a fast-moving show which held several hundred dealers—packed to the window sills in the Hotel Statler ballroom—in their seats from early morning until late evening.

Assisting Commercial Manager McElhinny in this presentation of Frigidaire spring selling plans were Advertising Manager Earl D. Doty, C. E. Quigley, beverage cooling manager, D. T. Hayward, east central household sales supervisor, A. C. Frieman, east central commercial sales supervisor, and W. F. Switzer, market analyst.

Despite the fact that the recent death of W. O. Waldsmith, Frigidaire distributor in the St. Louis area, has left the Frigidaire organization in that territory temporarily without a leader, dealers from eastern Missouri and southern Illinois were present in full force.

H. B. Fitzwilliam, household sales manager for the distributorship, was the local man in charge of arrangements. Helping him greet and talk with dealers were Fred Vesper, acting general manager, A. J. Warner, commercial sales manager, and Maxwell Waldsmith, air-conditioning sales manager of the distributorship.

The meeting was strictly business. There was no banquet, no party, no hired entertainers—save for a whoop-it-up band which was brought in for some community singing of old songs with Frigidaire-ized verses.

100 Dealers See New Stewart-Warners

ALBANY, N. Y.—More than 100 dealers and salesmen braved a blizzard to attend a meeting Feb. 4 here sponsored by the Ignition Service & Supply Co. for the purpose of introducing the new Stewart-Warner line of electric refrigerators.

In charge of the program for the meeting were H. J. Zehner, president, Ignition Service & Supply Co., Inc.; and R. J. Atkinson, sales manager.

Hardware Retailers Re-elect Ben Gude

(Concluded from Page 1, Column 3)

Ward & Hasner, and George Wooley of the Shapleigh Hardware Co.

C. C. Carter of Carthage, a member of the board of governors of the National Retail Hardware Association, was chief speaker at the opening session.

Charles E. Michel, sales manager of the Union Electric Light & Power Co., and rated as one of the leading Electric Refrigeration Bureau heads in the country, related some of his experiences in promoting the sale of electrical appliances, and told the hardware dealers that electric refrigerators, ranges, and laundry equipment offered them one of their highest profit opportunities for 1934. He assured them that they would not be subjected to unfair and obnoxious utility competition.

"Business must take a courageous and aggressive—rather than a pessimistic and cautious—course this year," declared Fowler McCormick, domestic sales manager of the International Harvester Co.

"The present business upturn," he said, "is the result of forceful governmental action. We must do our part by strict observance of the codes, even though we can't see just yet how they're going to work out in the end."

Thomas L. Gankel, NRA compliance director in St. Louis, and George Schulte, regional director of the NRA in Missouri, discussed and explained the application of various code provisions to the individual businesses of hardware dealers in that section.

E. W. Peterson, president of the National Retail Hardware Association; Bernie Sullivan, southwestern divisional manager of the Westinghouse Lamp Co.; and E. B. Gallaher of the Clover Business Service were also on the program.

Territory Larger



FRANKLIN SLAGEL

(Concluded from Page 1, Column 1)

to the states of California, Washington, and Oregon which have been covered by Mr. Slagel during the past year. Mr. Slagel's headquarters will continue to be located at 923 E. Third St., Los Angeles.

For many years prior to Mr. Slagel's moving to California, he was chief engineer of the Fedders Mfg. Co., in Buffalo.

In addition to the complete line of Fedders products, Mr. Slagel is representing the Automatic Reclosing Circuit Breaker Co., Columbus, Ohio, manufacturers of Ranco cold controls; Calco Chemical Co., Boundbrook, N. J., producers of sulphur dioxide; and the Schliemann Companies, Inc., New York City, suppliers of Russian mineral oils for refrigeration.

Seven Manufacturers Appoint Distributors

(Concluded from Page 1, Column 5)

is in charge of department stores and the central Philadelphia area.

C. D. Freeman will cover north and south Philadelphia, while the west part of the city will be supervised by John H. Roland. J. E. Alexandre will contact dealers in Harrisburg and Lancaster. John J. Eagan will cover Reading, Allentown, and Easton, with Carol Taylor acting as wholesale salesman in suburban Philadelphia sections. Credit will be supervised by Raymond J. Boldt.

New G-E Distributorship

HARRISBURG, Pa.—Just organized to distribute General Electric home appliances in this territory is Keystone Appliances, Inc., with headquarters at 140 S. Second St. in Harrisburg and retail branches in nine cities.

C. G. Coates, formerly of Cleveland, is president of the company, and Charles G. Blackburn, former commercial manager of Caswell, Inc., G-E distributor in Detroit, is retail sales manager. M. F. Bosworth, another Cleveland man, is sales promotion manager. Commercial manager is Ross E. Stickel.

The organization's retail branches are located in these cities: Allentown, Harrisburg, Lebanon, Scranton, York, Altoona, Lancaster, Reading, and Wilkes-Barre.

Sparton Appoints Two

JACKSON, Mich.—Two new refrigeration and radio distributors have been franchised by the Sparks-Withington Co., manufacturer of Sparton products here. They are the Sieg Co. of Davenport, Ia., and the Northern Indiana Distributing Co., South Bend, Ind.

Only 1 Franchise Offers You 3 PROFITS

The ROYAL ROAD to PROFIT in 1934

Ques. Who pioneered and developed the most compact refrigerating unit ever built?

Ans. GIBSON.

Ques. Who was the first to introduce the popular—Streamline—Cabinets?

Ans. GIBSON.

Ques. What manufacturer has a background of 58 years exclusive refrigeration experience?

Ans. GIBSON.

Ques. What manufacturer has had more years of refrigerator cabinet building experience?

Ans. GIBSON.

Ques. What manufacturer developed Controlled Circulation, Dome Light, Flat Bar Shelves, Safe Type Doors?

Ans. GIBSON.

Ques. What Franchise opens the door to The Three Major Markets?

Ans. Only GIBSON.

—We could go on and on if space would permit. The thing for you to do right NOW, TODAY is to write for complete facts regarding the Gibson Three Major Market Franchise.

—Because if you don't you are missing the greatest Dealer proposition in the refrigeration field.

IMPORTANT: GIBSON makes the promise that NO MATTER WHICH WAY THE CONSUMER PRICE RANGE SWINGS IN 1934 GIBSON DEALERS WILL BE SET TO TAKE ADVANTAGE.

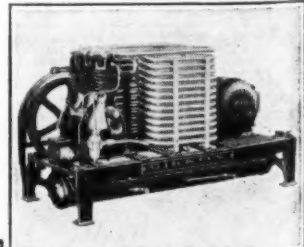
GIBSON ELECTRIC REFRIGERATOR CORPORATION

Greenville

Michigan

EXPORT SALES DEPT.
201 NORTH WELLS STREET
CHICAGO, ILLINOIS

Cable Address
"GIBSELCO" CHICAGO,
Bentley Code



GIBSON COMMERCIAL

Water coolers, beverage coolers, meat market, hotel, restaurant, grocery, clubs, large homes, hospitals, etc.

A laboratory analysis with every cylinder of ANSUL SULPHUR DIOXIDE and ANSUL METHYL CHLORIDE



Exact manufacturing methods are required to produce the high quality found in Ansul Sulphur Dioxide and Ansul Methyl Chloride.

To be certain that this high quality has been maintained, the contents of every cylinder of Ansul Sulphur Dioxide and Ansul Methyl Chloride are given a strict laboratory analysis before they leave the plant. The results of the test are placed on a tag attached to the cylinder.

Thus, you know that the Ansul Sulphur Dioxide you receive is of minimum moisture content and free from impurities. You can be certain that Ansul Methyl Chloride is of low moisture and acid content.

It pays to be particular. Specify Ansul refrigerants and be certain of highest quality at all times.

ANSUL CHEMICAL CO.
MARINETTE, WISCONSIN

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NORGE AND CROSLEY GET TRAINLOAD ORDERS

Frigidaire Introducing 15-Model Line March 21

Prices on New Frigidaire Line Start at \$99.50

Improved Features Mark Super, Deluxe Series Of '34 Models

DAYTON—Next Wednesday, March 21, Frigidaire dealers throughout the land will throw open their doors for the first public showings of the 1934 15-model line of Frigidaire household refrigerators which have an installed price range of from \$99.50 to \$509.

Frigidaire's '34 line is split up into four series of models—the standard, master, super and deluxe. Cabinet design is practically unchanged from last year, the embossed "shield shaped" panels on the front being the mark of the super and deluxe series, a raised panel running the length of the storage compartment and compressor compartment doors distinguishing the master series. The standard series has rounded corners on the top and rounded vertical edges.

There are three sizes in the standard series, a 4 cu. ft. model selling for \$99.50, a 5 cu. ft. model selling for \$129.60, and a 6 cu. ft. model selling for \$155.50.

Standard series models are equipped with the hermetically sealed rotary unit introduced last year. Cabinet exteriors are finished in Dulux. Evaporator is centered at the top of the cabinet and principal features are automatic defrosting and automatic ice tray release.

Master series includes three models, the 4 cu. ft. cabinet selling at \$145, the 6 cu. ft. at \$203, and the 8 cu. ft. at \$237. The Frigidaire twin cylinder condensing unit will be used in this model, and cabinet exteriors have a Dulux finish.

New feature on this model is a door latch that throws the door open when it is struck with knee, elbow or

(Concluded on Page 14, Column 1)

New Subsidiary Formed By American Radiator

NEW YORK CITY—American Radiator and Standard Sanitary Corp. has organized a special air conditioning division to aid its subsidiaries in coordinating their work in the air conditioning field, Clarence M. Woolley, chairman of the board of the corporation, has announced.

It will be the purpose of the new division, Mr. Woolley said, to make it possible for the component companies of the corporation to expand their activities in the air conditioning field, and provide a complete line of air conditioning equipment that can be made part of the integral equipment of any house or building.

Fowler Manning, director of the new division, was formerly president of L. C. Smith & Corona Typewriters, Inc. Before he became president of that company in 1928, he was director of sales for five years of the Hoover Co., manufacturing vacuum cleaners, and for four years before that he was director of sales for the Diamond Match Co.

Associated with him in the new air conditioning division will be George R. Atherton, who has been assistant

(Concluded on Page 24, Column 3)

Room Cooler Department Formed by Wurlitzer

NORTH TONAWANDA, N. Y.—Rudolph Wurlitzer Mfg. Co. here has just organized a new department for the manufacture of air conditioners. In charge of the design and installation of this equipment is Charles F. Beeler, who will also assist in the department's sales activities.

Streamlining Features New Mayflower Models

DAYTON—Trupar Mfg. Co.'s 1934 line of Mayflower household refrigerators is featured by cabinet streamlining incorporating a design that is "different," and by the inclusion of a number of new sales features.

Four of the six Mayflower models have cabinets developed in the modern streamline spirit. They are characterized by a flush top, beveled corners, curved front on upper and lower doors, and embossed front panels emphasizing vertical lines, somewhat in the motif of the Century of Progress architecture.

One of the principal features in the deluxe models is an extra non-refrigerated food storage space in the bottom of the cabinet, beneath the food compartment, for the storage of non-perishables and bottled goods. This space is covered by a door, and has a wire half-grille to hold foods in their place.

Other features include sliding, removable food trays with a 2-in. side wall on each side, a food tray in the bottom of the refrigerated compartment, "press button" door handle, porcelain evaporator, and interior electric light. The deluxe models are also equipped with a Flexotray.

Side walls of the trays permit easy stacking of the food and permit use of full net cu. ft. capacity of the

(Concluded on Page 24, Column 4)

Bureau Activities Are Continued

NEW YORK CITY—Plans are under way for continuation of the Electric Refrigeration Bureau, and extension of its activities, announcement to this effect was made last week at Bureau headquarters here, where it was stated that the program of the activities under the bureau's present organization set-up had been completed up to July 1.

Regarding plans for the second half of the year, the Refrigeration Division of the National Electrical Manufacturers Association has requested the bureau to draft a tentative program of cooperative activity and submit it to the division at its May meeting. If this program is approved,

(Concluded on Page 24, Column 5)

Carrier and Thompson Talk to 350 Detroiters About Air Conditioning and Freon

DETROIT—A group of about 350 refrigerating and air-conditioning engineers, architects, contractors, and heating and ventilating men convened to get some new information on Freon from R. J. Thompson of Kinetic Chemicals, Inc., and to hear Willis Carrier, "the dean of air conditioning," at Monday night's meeting of the Detroit A.S.R.E.

The meeting was preceded by a dinner of A.S.R.E. members, and was presided over by F. M. Cockrell, publisher of ELECTRIC REFRIGERATION NEWS.

Brief remarks were made at the dinner meeting by George Bright, consulting engineer; G. M. Johnston, president of Universal Cooler Corp.; Louis Ruthenburg, consultant to the Refrigeration Division of Nema; and S. S. Sanford, Detroit Edison Co.

Before introducing the two main speakers at the open meeting, Mr. Cockrell told some of the problems encountered in installing ducts for air conditioning the building into which all offices of ELECTRIC REFRIGERATION NEWS are now being moved.

Mr. Thompson's talk was entitled "Facts About Freon," and traced some of the early development work on that refrigerant down to its present applications for commercial refrigera-

Styling Appears In Oil Burners at Annual Exhibit

Winter Air Conditioners Featured by Several Manufacturers

By George F. Taubeneck

PHILADELPHIA, March 6—(Special Wire to ELECTRIC REFRIGERATION NEWS)—Style has entered the oil burner industry. Once an awkward-looking contraption with dingfods jutting out from all angles, the oil burner is now a streamlined thing of beauty and color. This trend is perhaps the most noticeable feature of the eleventh annual National Oil Burner show, which opened in the Commercial Museum here last night, and which will last the rest of the week.

The ungainliness of old-time oil burners has been superseded by new jobs which have their nakedness encased in neat metal pants, and decorated in colored lacquer, chromium, or brass.

Good examples are the new Wayne Warm-Air complete air-conditioning unit which is finished in Sahara sand and chocolate, and the Quiet May Domestic burner, which is a streamlined package available in attractive shades of red, green, blue, and chrome, and which was designed by the eminent Lurelle Guild (who styled the 1934 Norge refrigerator).

Following General Electric's lead,

(Continued on Page 16, Column 1)

Norge Gets Order for 7,268 Units in 1 Day

DETROIT—On the last day of February, Norge Corp. here received more orders for household refrigerators than on any other single day in its history. Orders for 7,268 units were placed by Norge distributors on that day, bringing the total of unfilled orders on hand, as of March 1, to more than 25,000—largest group of orders Norge has ever had at this time of year, according to John H. Knapp, vice president in charge of sales.

Apex Curves Top on New Line; Seven Models Shown

CLEVELAND—New cabinet styling featuring a gracefully curved top and improved construction marks the 1934 line of Apex household refrigerators, soon to be announced to the public by Apex Electrical Mfg. Co. of this city.

Seven models comprise the new line, which is split into a standard and a deluxe series. Standard models come in four sizes, with 4, 4.5, 6, and 7-cu. ft. net capacity. The three porcelain models have 6, 7, and 8-cu. ft. net capacity, respectively.

The standard models are equipped with a single-cylinder, spring mounted condensing unit. Cabinets in the two smallest models have metal shelf hooks, flat wire metal shelves, a cut-out bottom shelf, Tylac breaker strips, rubber corner clips, and air cushion door seals. The two other standard models have the same cabinet features except that they are equipped with rubber shelf hooks and expanded metal shelves and have a folding bottom shelf. Cabinet exteriors are furnished in lacquer. Porcelain evaporators are centered in the cabinet, and have a refrigerated shelf. Control in the two smallest models is

(Concluded on Page 24, Column 5)

Kelvinator Ships 20,943 Units

DETROIT—February shipments of Kelvinator Corp. totaled 20,943 units, more than 300 per cent of those for the corresponding month of 1933. This brings total shipments for the first five months of the company's present fiscal year to 78 per cent more than those of the same period in the previous year, according to H. W. Burritt, vice president in charge of sales.

End of the month found unfilled orders 403 per cent in excess of those on the books at the same time last year, and orders received during February were 461 per cent greater than those received in February of 1933.

This record, which makes the month just passed 228 per cent of the best previous February in Kelvinator's history exceeds the shipment record of any single month in the boom years of 1928 and 1929, Mr. Burritt says.

3 Distributors Order 149 Cars Of Norge Units

Crosley Sells 38-Carload Order to Pacific Coast Company

DETROIT—Norge Corp. here has just received three orders for trainload shipments of household refrigerators.

One lot of 65 carloads is to go to Moser & Suor, Inc., Norge distributor in Kansas City. Another, for 44 carloads, will go to Trilling & Montague, Norge distributor in Philadelphia, while the third, for 40 carloads, is for the Sampson Electric Co., distributor in Chicago.

All three orders call for shipment during March, and are to meet the immediate requirements of dealers supplied by these distributors. The distributors state that they expect further orders to follow within a short time, for shipment during April and May, according to Norge officials.

"Our plants in Detroit and Muskegon are working at full capacity, and we finished February with the largest bank of unfilled orders we have ever had," says John H. Knapp, vice president in charge of sales.

Chanslor & Lyon Orders Trainload of Crosleys

CINCINNATI—An order for 38 carloads of Crosley Shelvador and Tri-Shelvador electric refrigerators was received by the Crosley Radio Corp. here on March 1 from Chanslor & Lyon Stores, Inc., San Francisco Crosley distributor.

The Chanslor & Lyon company is a large automotive distributing concern which was appointed Crosley distributor seven months ago. It has a special department devoted to sale of Crosley refrigerators and radios. P. H. Lyon is president and manager.

Kelvinator Ships Part of 30-Carload Order

DETROIT—Shipment has already been made on approximately three-fourths of the 30-carload order placed three weeks ago with Kelvinator Corp. by Raymond Rosen & Co., Philadelphia distributor, and the remainder of the refrigerators are being shipped this week, according to Kelvinator officials. It was the largest single order ever placed by a Kelvinator distributor.

Raw Materials Ordered By Frigidaire Corp.

DAYTON, Ohio—Frigidaire Corp. on March 1 placed commitments with suppliers in various parts of the country for more than \$2,000,000 worth of raw materials and fabricated parts, according to E. G. Biechler, president. On the same day he stated that the company's expenditures for supplies and materials during the first quarter will probably reach the \$5,000,000 mark.

A few days before this announcement was made, Mr. Biechler said that Frigidaire is planning to boost its expenditure for newspaper, national magazine, and other forms of advertising.

EHFA Will Not Build Electric Appliances

KNOXVILLE, Tenn.—The Electric Home and Farm Authority, subsidiary of the Tennessee Valley Authority, has "no intention at present" of manufacturing electrical appliances.

This was the announcement made last week by officials of the TVA in commenting on the fact that high quality electrical appliances will go on sale to two million residents of the Tennessee Valley by May 1.

NEW HOUSEHOLD MODELS OF 18 COMPANIES LISTED IN THIS ISSUE

Styling, Utility, & Mechanical Improvements Characterize 1934 Lines

Sliding Bar-Type Shelves, Semi-Concealed Hardware, & Central Evaporators Feature Most Models

By John T. Schaefer

ALMOST unanimous adoption of styled cabinets, greater convenience and utility, and improved and more quiet mechanical operation, in general sum up refinements which have been made in this year's models of household electric refrigerators. Designing engineers this year took another long step away from the early electric refrigerator which was simply an ice box with a mechanical refrigerating system in the top (or bottom), toward the new breed of equipment which is none other than a modern electric refrigerator.

Manufacturers have become "feature-conscious" during the past two years (stimulated perhaps by Crosley's Shelvador), with the result that 1934 models are replete with features and gadgets intended to make them more appealing to the prospective buyer.

No longer can it be said of electric refrigerators that "they are all just about alike." This year they are being distinctively styled, and many are provided with features designed to make them different.

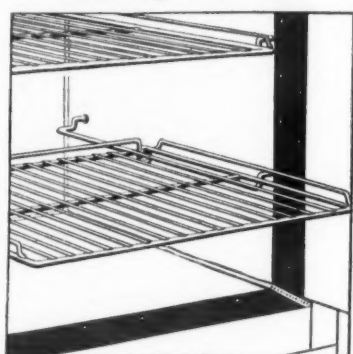
One of the new ideas in arrangement of food in refrigerators is Kelvinator's "Food Filing" system consisting of three separate refriger-

ators which don't require refrigerated temperatures.

Stewart-Warner introduced a new feature this year with its rolling shelves. These are wire shelves whose edges rest between rollers so a shelf can be pulled forward easily to a stop position. By flipping a small clasp upward, the user can then remove the shelf from the refrigerator and use it as a tray (edges are provided all around the shelves to avoid dropping dishes when used as a tray).

Sliding shelves, it will be remembered, gained popular acceptance about two years ago, following aggres-

Sliding Shelves



This convenience is incorporated in most '34 models.

sive advertising of that feature by General Electric. They are now standard equipment on many makes of refrigerators.

Leonard's newest feature is a service or rearrangement tray which slides out from below the bottom shelf of the refrigerator. It is intended to be drawn out and used in rearranging food contents of the refrigerator—saving food juggling. The tray can also be used in loading the refrigerator or for serving, as it is removable. It is fabricated of anodically treated aluminum.

Flexible Shelf Arrangement

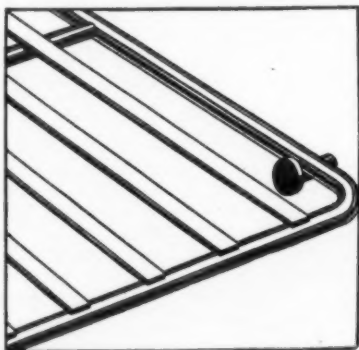
Shelves are generally being made more flexible in new models to give the housewife more choice in arrangement of the interior of her refrigerator. Some are folding, others have removable sections to accommodate unusually high dishes or bottles, others are telescopic. Most refrigerators have at least one adjustable shelf this year; Norge has shelves that can be adjusted without removing the food load.

Shelves are mostly bar-type this year, preventing dishes from getting caught on the wire. Copeland and Grunow this year have adopted diamond web-type shelves, intended also to eliminate spilling.

Electric lights which switch on automatically when the cabinet door is opened are standard on practically all deluxe models this year. Their placement has been changed somewhat by some manufacturers to avoid shutting off the light with large dishes on the top shelf. Also standard size receptacles are being adopted so a burned-out lamp can be replaced without shopping around for a miniature lamp.

In hardware, the trend has been quite definitely toward use of the semi-concealed type, particularly on deluxe models, and many refrigerator manufacturers have taken pains to secure hinges and door latches designed specifically to harmonize with their particular cabinet styles.

Bar Type Shelves



These ribbon-like bars aid sliding, prevent utensils from tipping.

Food Filing



These "filing" drawers are a feature of the '34 Kelvinator.

ated metal drawers in the bottom of the food compartment. Dairy foods, vegetables, and left-overs can thus be preserved in a convenient manner, keeping the storage space above free for larger products.

Another convenience feature on many new models is the foot pedal operated door opener, pioneered by Leonard a couple of years ago as the "Len-A-Dor" and promptly adopted by Gibson,

Door Opener



This "Prestoe" device opens the door of Gibson's refrigerator.

G-E, and others. With this device a housewife can walk over to her refrigerator with both hands full of food, and open the door by tripping the pedal with her foot.

Crosley Radio Corp., which last year brought out its unorthodox "Shelvador" (shelf within a door), has added several similar features to the 1934 Crosleys. These include the "Shelvatrav" a demountable wire shelf which hinges down from the inner side of the door (which extends for the full height of the refrigerator), and the "Shelvabasket," a wire vegetable basket on the lower part of the door, arranged to swing into a "Storabin" non-refrigerated storage compartment below. The latter is for potatoes and other produce which

A Double-Duty Feature



Housewives may partially withdraw this tray from the new Leonard for use in holding dishes while others are being rearranged, or it may be used as a service tray.

Several manufacturers have adopted door latches with the easy-open feature. Norge's latch has a raised section which swings open the food chamber door when pressed with a fingertip or elbow. Stewart-Warner has a similar device on its latch. And Westinghouse has a vertical bar at the side of the door which may be touched with the knee or pulled with a finger to swing wide the door.

Particularly on deluxe models, Inland's rubber ice trays and McCord's flexible metal ice trays have been made standard equipment by a number of companies. And some of the latter are also standardizing on at least one of Inland's rubber grids for ice trays. Newest of the rubber trays have metal bars at the bottom or sides to give rigidity and easy of handling, yet do not interfere with the ease with which cubes may be extracted. Various types of ice tray releases have also been placed in fairly wide use.

In a number of instances, manufacturers this year have enlarged their ice trays or have added extra ones, thus enabling them to highspot the "ample ice" feature of their product to a public whose ice cube consumption has increased since prohibition repeal.

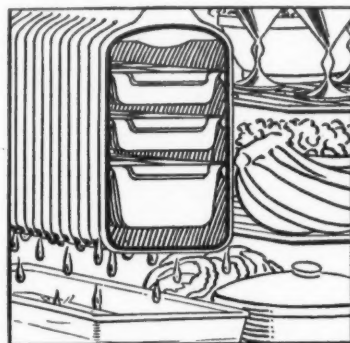
Extra storage compartments are featured by some manufacturers this

year, and standard on practically all but "leader models" this year.

This feature employs a mechanism in the control which calls for wide-cycle operation of the condensing unit when the control is set at defrost, thus serving just enough refrigeration to maintain food-preserving temperatures, but permitting the evaporator to rise above 32° F. so that the frost accumulation melts off.

The control is set to defrost periodically just as with the former system, but should the housewife for-

Semi-Automatic Defrosting



Food is preserved while defrosting takes place in most models.

get to move it back to normal operation the temperature will not rise to a dangerous point.

The new control manufactured by General Electric and used on a number of refrigerators goes a step further toward complete automatic defrosting with an automatic return. With this control the housewife simply sets the switch to defrost, and when the frost is melted off, the control automatically snaps back to normal operation.

It is interesting to note that all manufacturers are now feating selective temperatures, with 7, 8, 9, or 10 different temperatures at the control dial. Last year one large manufacturer left off the manual temperature selector, and featured completely automatic refrigeration.

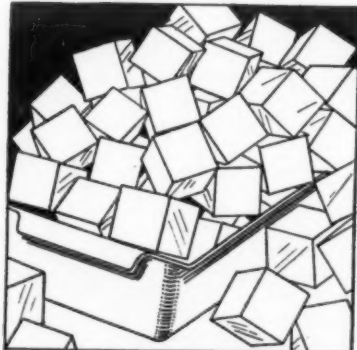
Economy Operating Position

Leonard and Westinghouse this year are furnishing a vacation or economy position on their control, at which the refrigerator can be left running with lower power consumption, producing just enough refrigeration to preserve foods when the family is away for a few days.

Potter's low-temperature compartment is still the only one built for sub-freezing temperatures in a separate insulated chamber for prolonged storage of frozen foods and desserts, and for quick-chilling of foods. The new Potter line has been styled this year.

Considerable attention is being given to maintenance of higher rela-

Ice Cubes Aplenty



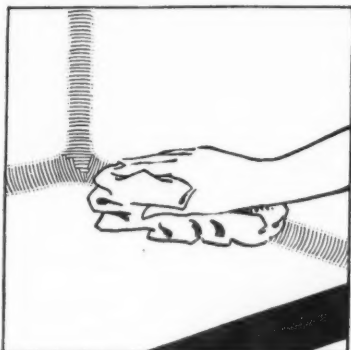
Greater ice-making capacity is a '34 feature in many models.

tive humidities in the cabinet. Wurlitzer has a special evaporator with evaporators with a finned type coil above the ice-freezing unit, giving additional surface to cool the compartment without extracting as much moisture from the air as does the a finned type coil above the ice-freezing unit, giving additional surface to cool the compartment without extracting as much moisture from the air as does the colder cooling unit below.

Potter cools the normal-temperature compartment similarly, with a large extended surface coil in the rear, producing a condition of fairly high relative humidity in the food compartment.

Dulux, the new refrigerator finish developed by du Pont, is now being used by a number of manufacturers, including Seeger, Frigidaire, and Westinghouse.

Rounded Corners



Keeping the food chamber clean is easy in new cabinets.

Food compartment liners drawn from a single piece of sheet metal are also being mentioned among features. It is almost universally standard practice in 1934 models to apply two or three coats of acid-resistant porcelain to the interior of the food compartment. Interior corners are generally rounded to facilitate cleaning out the refrigerator.

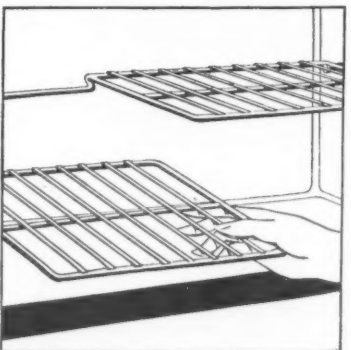
Balloon-Type Gaskets

"Balloon-type" rubber gaskets for cabinet door seals have also appeared this year as a further refinement of cabinet construction. Doors are being hung more rigidly, with hinges that swing at the slightest touch so that the housewife can close her refrigerator with the same ease as she opens it by the new types of latches.

More quiet operation has been an aim of machine designers for some time, and in this year's models there is further evidence of progress in that direction. Compressors are being machined to more narrow limits, the compressor compartments are receiving acoustical treatment, and the complete condensing units are being mounted in rubber, on springs, or in a combination of spring and rubber suspension.

On the 1934 Leonard line, cabinet legs are an integral part of the cabinet sides, giving a smooth streamline appearance to the refrigerator as a whole. This also serves to strengthen

Changeability



Mrs. User will find '34 shelves permit flexible arrangement.

cabinet construction, according to Leonard engineers.

Stewart-Warner, Norge, and Crosley have adopted shorter and more massive legs to attain their stylish "streamline" effect. This appears to be a reversal from the trend toward "broom-high" legs which seemed to be coming into vogue a couple of years ago.

Sparton Revises Employee Insurance Program

JACKSON, Mich.—By revising its employees' group insurance program, Sparks-Withington Co., manufacturer of Sparton refrigerators here has increased total insurance in force to approximately \$1,100,000, simultaneously extending coverage to some classes of employees previously ineligible.

The new program provides group life insurance and accident and health benefits for more than 1,000 workers. Metropolitan Life Insurance Co. underwriter of the original contract, is administering the revised plan on a cooperative basis, with employer and employees sharing the cost.

THE MOST LOYAL AND ENTHUSIASTIC

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ELECTRIC REFRIGERATOR OWNERS

IN THE

WORLD !



NO WONDER WESTINGHOUSE DEALERS *make sales faster • make more money*

● Every electric refrigerator dealer *knows* that *satisfied owners* are his best asset. They reduce his service expense . . . and they bring him *extra business*! That is why the findings of the recently-conducted Houser Survey are so important to everyone who wants to make money in refrigeration this year. For they *prove*, by actual check of 15,000 homes from coast to coast, that Westinghouse owners are better satisfied and more loyal than the owners of any other make! Wouldn't *you* rather sell a refrigerator that can show a record like that?

But greater owner-satisfaction is only *one* of the many advantages of the Westinghouse Franchise. To get the complete story, send at once for the Franchise Comparison Chart. It

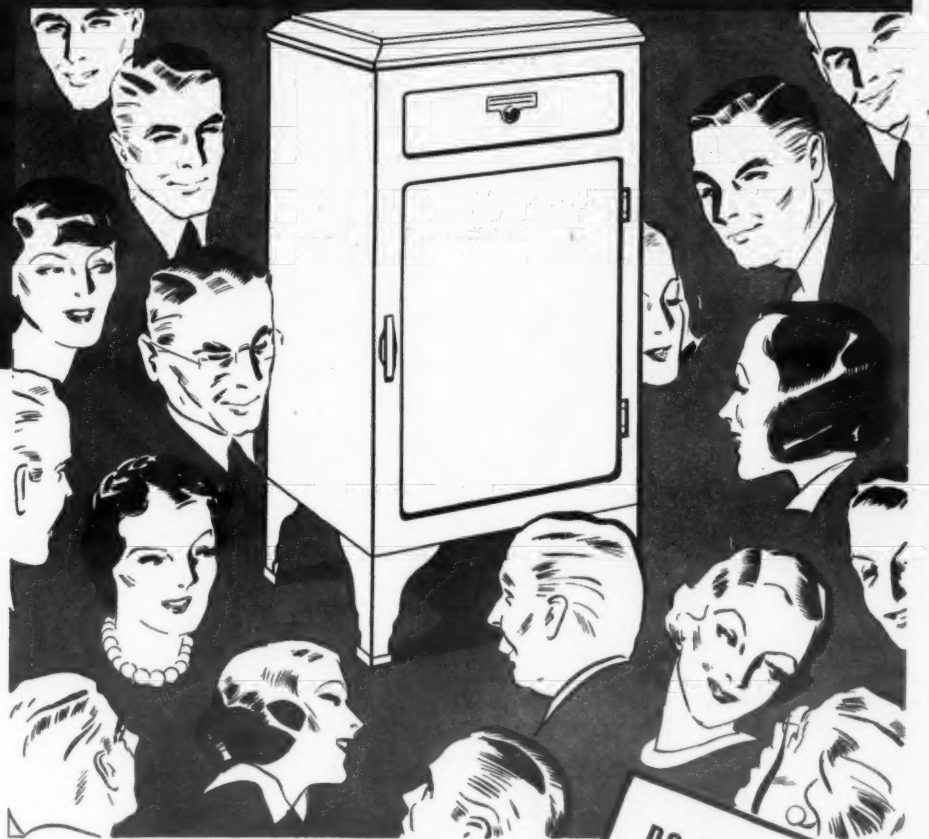
will enable you to make your own check of the Westinghouse proposition against any other, on 100 factors that have a dollars-and-cents value to you. You can do this in the privacy of your own office, free from outside "selling pressure." Compare product . . . price structure . . . cooperation . . . prestige . . . and profit possibilities. There is still time to get aboard the Westinghouse Spring band-wagon and make real money the Westinghouse way.

So don't delay. The Franchise Comparison Chart comes to you without cost or obligation. Send for it now . . . on the coupon below or your own letterhead. You'll agree the few minutes it takes to study it are the most profitable you could ever spend.

EVERY HOUSE NEEDS WESTINGHOUSE

Westinghouse

Refrigerators



Get the facts! Send for the
Franchise Comparison Chart



MAIL THIS COUPON !

Westinghouse Electric & Mfg. Co.,
Refrigeration Div. (ERN-3-7), Mansfield, Ohio.

We're interested in looking over the Franchise Comparison Chart. Send us a free copy without obligation.

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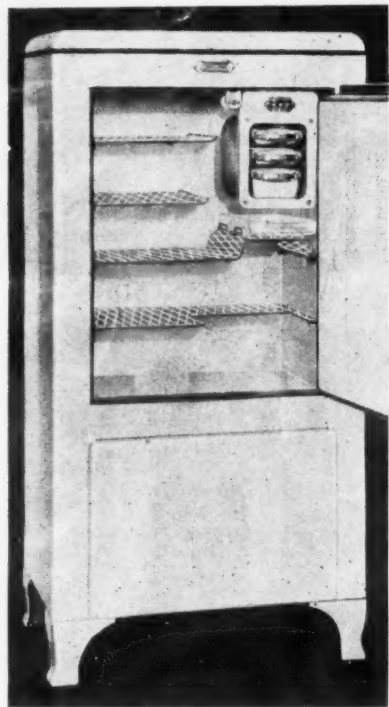
NEW EQUIPMENT

A SURVEY OF 1934 HOUSEHOLD MODELS OFFERED
BY LEADING MANUFACTURERS

Copeland

Copeland Refrigeration Corp.
Mt. Clemens, Mich.

A return to the single-cylinder, conventional-type compressor employ-



ed in 1932 and new cabinet lines mark the 1934 line of Copeland household

refrigerators, recently introduced by the reorganized Copeland company.

Cabinets have nicely rounded corners, and vertical edges on the doors and compressor compartment panel are rounded to give the streamline effect.

Hardware is of advanced design, with hinges torpedo shaped, the tips finished in black and the rest in chromium. Door latch and strike are in the same motif.

Evaporators are of the dry-expansion type on all but the two largest models, which have a brine tank. Penn "Coldial" cold controls are standard. All but one of the models have one Inland rubber ice cube tray.

Shelves in the porcelain models have a new "diamond-grid" design which prevents small bottles and objects falling through openings. Shelves are mounted on rubber reinforced supports. The bottom shelf has been cut out to provide for bottle storage space.

The 3.96 cu. ft. model is available in lacquer exterior finish only, but the 5.25, 6.41, and 7.42 cu. ft. models are available with either lacquer or porcelain exteriors.

Crosley

Crosley Radio Corp.
Cincinnati, Ohio

In the 1934 Crosley offering there are two lines, one standard and one deluxe. Full-length doors appear on the deluxe line, which is also distinguished by having a solid black base (no legs). Rounded doors, stagger-cut legs, and a radio-like grille for

ventilation mark the standard line.

The deluxe line is called the Tri-Shelvador, because in addition to the Shelvador (shelves within the door), the interior of the full-length door incorporates a Shelvatray (demountable shelf on which food may be placed as the refrigerator is unloaded).



and a Shelvabasket (mounted basket for vegetables which swings with the door into the Storabin (storage compartment) in the bottom of the refrigerator).

Refrigeration system is basically unchanged from last year's design, being of the conventional open type, furnished as a top-mounted packaged unit which a service man can remove by lifting it out of the top of the cabinet.

Model EA-35, a 3.5-cu. ft. model in the standard line, sells for \$99.50 delivered and installed or \$119.50 with porcelain exterior. Model EA-43, with a net capacity of 4.3 cu. ft., is priced at \$117 with lacquer exterior, \$139.50

with porcelain.

E-43, first of the Tri-Shelvadors, has a net capacity of 4.3 cu. ft., and sells for \$130 in lacquer finish, \$155 in porcelain. Second model is E-55, a 5.51-cu. ft. job priced at \$150 in lacquer, \$177.50 in porcelain. Largest is the E-70, with a 7.05-cu. ft. capacity, priced at \$175 in lacquer, \$205 in porcelain.

General Electric

General Electric Co.
Nela Park, Cleveland, Ohio

The present line of General Electric household refrigerators consists of 21 models, classified as standard and deluxe Monitor Top models and standard and deluxe flat-top models.

Features of the flat-top models are their all-steel cabinets, stainless steel evaporators, Textolite door strips, and chromium hardware. The Monitor Top refrigerators have all-steel cabinets, all-porcelain finish, sliding shelves, stainless steel evaporators, semi-automatic temperature controls, G-E defrosters, interior lights, and foot-pedal door openers.

The 21 models, with their net storage capacities and recommended delivered prices follow (prices vary slightly according to zones):

Deluxe flat-top model F-5, 5 cu. ft., \$165 to \$170; standard flat-top models—HE-4, 4 cu. ft., \$119 to \$124; HE-5, 5 cu. ft., \$155 to \$160; HE-7, 7 cu. ft., \$199 to \$209.

Deluxe Monitor Top models—X-7 (glyptal finish, 7 cu. ft., \$245 to \$255; T-7 (porcelain finish), 7 cu. ft., \$270 to \$280.

Standard Monitor Top models (all-steel cabinets with baked glyptal finish)—HX-47, 4.7 cu. ft., \$164 to \$169; HS-70, 7 cu. ft., \$224 to \$234; S-85, 8.5 cu. ft., \$274 to \$282; S-07, 10.7 cu. ft., \$375 to \$387; S-146, 14.6 cu. ft., \$438 to \$453; S-182A, 18.2 cu. ft., \$603 to \$618.

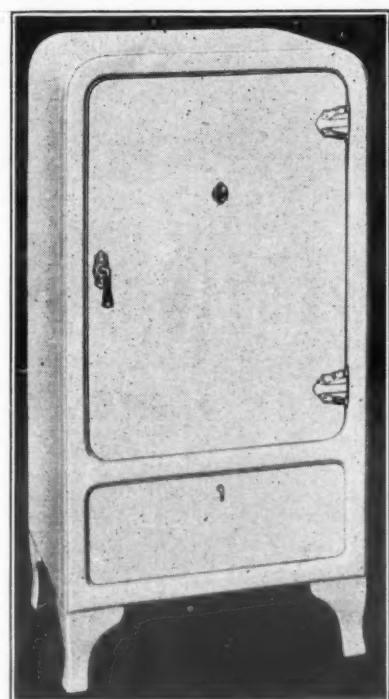
Standard Monitor Top models (porcelain exterior)—HT-47, 4.7 cu. ft., \$185 to \$190; HT-70, 7 cu. ft., \$250 to \$260; P-85, 8.5 cu. ft., \$289 to \$297; P-110, 11 cu. ft., \$370 to \$382; P-134, 13.4 cu. ft., \$388 to \$401; P-170A, 17 cu. ft., \$558 to \$573; P-4180A, 18 cu. ft., \$635 to \$650.

Apartment house models—HE-3, 3 cu. ft., \$129 to \$134; HE-3K, \$129 to \$134.

Grunow

General Household Utilities Co.
2650 N. Crawford Ave., Chicago, Ill.

Little change has been made in the outward appearance of the 1934 Grunow refrigerator, but several alterations have been made in the unit



and the food chamber interior. And there are two new "super deluxe" models this year, making a total of nine models in the line.

Featured change in the '34 Grunow is in the compressor. As compared with the mechanism in last year's models, the new unit has literally been placed on its side, then covered by a steel dome. The latter does not hermetically seal the compressor, but is merely a protection from dust and dirt collection.

Except for changes in the unit, the company's three-model standard line is practically the same as last year. The same is true of models 50-D and 54-D in the deluxe line, but in 65-D and 80-D of this line, the evaporator is chromium-plated and is located in the top-center of the food chamber.

In general appearance, the two new super deluxe models are similar to the two large deluxe models, but have these extra features: tray releases, diamond-web shelves, concealed interior light, three of McCord's flexible metal ice trays, a foot-pedal door opener, a 12-quart vegetable crisper. Evaporator is centered. Green trim is optional.

Smallest of the super deluxe models is 65-SD, with 6.5 cu. ft. of storage space. Its retail price, f.o.b. factory, is \$225. Other model is 80-SD, having

an 8-cu. ft. net storage capacity, priced at \$245.

Deluxe prices are: 50-D, \$157.50; 54-D, \$175; 65-D, \$189.50; and 80-D, \$209.50 (all prices f.o.b. factory). Standard prices are: 50-G, \$129.50; 60-G, \$149.50; and 70-G, \$179.50.

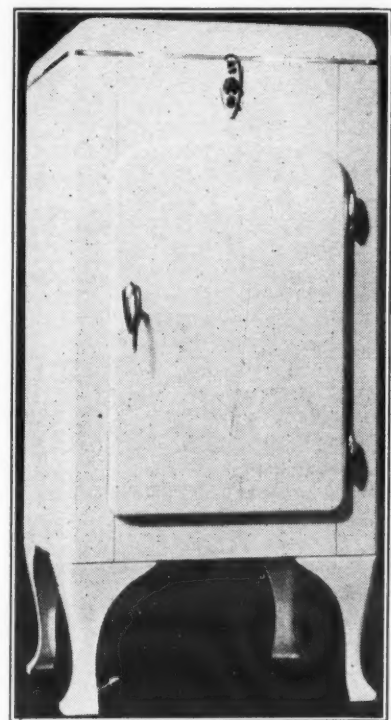
Gibson

Gibson Electric Refrigerator Corp.
Greenville, Mich.

Three distinct cabinet styles or "series" comprise the 1934 line of Gibson household electric refrigerators.

Just introduced this year is a new deluxe series with paneled cabinet front and semi-concealed modernistic hardware. Two streamlined models are carried over from the streamlined series introduced last year, and there is a third series in plain furniture-styled cabinets.

The "Pres-Toe" door opening pedal is now standard on both the streamlined models, as well as on the deluxe



series. The combination name-plate and temperature regulating dial which was characteristic of the streamline models is also being used on the new deluxe series.

Other features include a sliding shelf, a take-out shelf, butter and egg tray, dome light, flat bar shelves, broom-high legs, panelite strips and 12-zone temperature control.

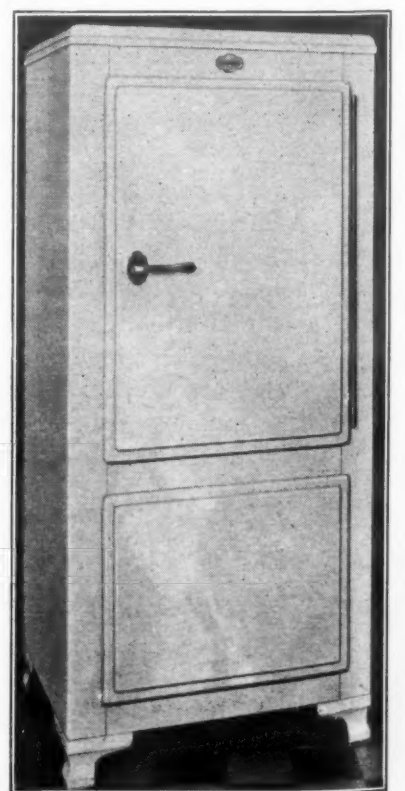
All models are equipped with the twin-cylinder, hermetic "Mono-Unit" introduced last year. Evaporators are of porcelain construction.

Models LR-504 and LR-574 have 4.72 and 5.51 cu. ft. net capacity, respectively. The two models in the "streamline" series have 4.94 and 6.85 cu. ft. capacity. Deluxe models have 6.05, 7.36, and 8 cu. ft. net capacity, the largest model having two doors.

Ice-O-Matic

Williams Oil-O-Matic Co.
Bloomington, Ill.

Principal features of the 8-model, 1934 line of Williams Ice-O-Matic household electric refrigerators are the "finger tip" door latches, chrome-



plated, full-length piano hinges, and furniture-styled cabinets.

Other features include automatic temperature and overload controls, au-

(Continued on Page 6, Column 1)

Look for RESULTS!

CHOOSE YOUR REFRIGERATOR BY THIS COMPARISON CHART

Today, any good make of refrigerator will give you mechanical reliability and uniform operating cost. Therefore, the determining factor in your purchase should be WHAT IT WILL DO FOR YOU IN YOUR HOME. Listed below are features which you should demand if you are to receive full value for your money.

	Make of Refrigerator	
	POTTER	"A" "B"
How long has the maker been engaged in building electric refrigerators?	1926	
Will the refrigerator preserve all foods for 7 to 10 days without harmful loss of natural moisture (dehydration) and do this without the aid of hydrating pans?	Yes	
Will it preserve the original flavor of all stored foods for 7 to 10 days?	Yes	
Will bread and cake remain fresh for 7 to 10 day periods if left uncovered in the food compartment?	Yes	
Does it provide a sub-zero temperature for ice cube and dessert making?	Yes	
Does it provide a low temperature compartment for the safe storage of at least 25 pounds of meat over indefinite periods?	Yes	
Does it provide a compartment for the quick chilling of salads and cocktails, as well as the rapid cooling of gelatins, custards, pies, etc.?	Yes	
What monthly savings in the family budget can be made through its correct use?	★	
Is the dealer willing to give you a written guarantee that it will give these results?	Yes	

★ Get our figures, based on your present expenditures.

DEALER'S NAME

POTTER Air-Conditioned REFRIGERATION

... If you would like to see this kind of advertising in your local paper with your signature in the space allotted for dealer's name... with exclusive sales rights in your city for Potter Air Conditioned Refrigerators...

WRITE, WIRE OR PHONE

POTTER REFRIGERATOR CORPORATION
BUFFALO, NEW YORK

Why Argue

with Them?



★ Some people *like* to argue. But others don't. And no matter how clever a salesman may be, arguing with a prospect is risky business. There's always the chance that the prospect may feel that his judgment is being questioned. And then he's a prospect no longer. ● Of course you can't agree with *every* prospect. But you will find yourself in agreement with the majority if the electric refrigerator you sell is Frigidaire. ● That's definitely proved by the fact that there are a million more Frigidaires in use than any other make. More people *know* Frigidaire. More people want it. More people insist upon having it. *And the dealers who sell it are doing more business and making more money.* Frigidaire Corporation, Dayton, Ohio.

Frigidaire

A PRODUCT OF GENERAL MOTORS

NEW EQUIPMENT

(Continued from Page 4, Column 5)

tomatic defrosting, ribbon-bar shelves, and broom-high legs.

Cabinets are insulated with Dry-Zero. Deluxe models are equipped with a dome light. Fedders evaporators and a Penn control are standard. Breaker strips on the door are Bakelite on all but the cheapest model.

Smallest model in the line has 4 cu. ft. net food storage capacity and its installed price is \$119.50, with cabinet exterior in lacquer. The model with 5.3 cu. ft. capacity with lacquer exterior is priced at \$149.50, with porcelain exterior at \$168.50. These three models comprise the series which are equipped with single-cylinder compressor.

In the twin-cylinder series the lacquer model with 5.3 cu. ft. storage capacity retails at \$156.50, with porcelain exterior at \$175.50; the lacquer cabinet with 6.4 cu. ft. capacity at \$180.50, with porcelain exterior, \$199.50; the 7.2 cu. ft. model has a porcelain exterior and retails at \$269.50.

All prices are f.o.b. factory, and include tax.

Lectrik-Ice

Uniflow Mfg. Co.
Erie, Pa.

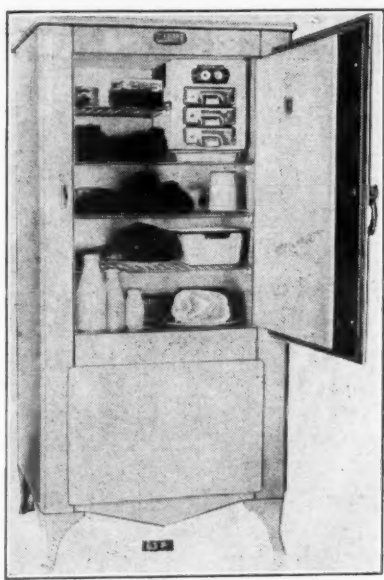
Maintenance of approximately 75 per cent relative humidity by a between-cycle automatic defrosting system is the main claim for the "Humidrol Lectrik-Ice" household refrigerator manufactured by the Uniflow Mfg. Co.

Other features of the "Humidrol Lectrik-Ice" models are chamfered cabinet edges which give a streamline appearance; ribbon-type shelves, porcelain shelf supports, rubber ice cube trays, chromium plated fronts for the ice trays, 8-point temperature control

and broom-high legs.

Porcelain models may be had in dapple finishes in several different colors. Door trim is of beveled bakelite.

In addition to eight models in the "Humidrol" line there are two "Challenger" models, which are price leaders, and which do not include the



main features of the "Humidrol" line.

The small "Challenger" model has 4.6 cu. ft. gross food storage capacity and sells for \$99.50. (Prices do not include Federal tax.) The other "Challenger" model has 6 cu. ft. gross food storage capacity and lists at \$139.50.

The 4.5 cu. ft. gross model with Duco finish in the "Humidrol" line lists at \$149.50, with porcelain exterior,

at \$165.

Other models include a 5.5 ft. gross with Duco exterior at \$159, with porcelain exterior at \$176; a 6.5 ft. gross model at \$182, with porcelain exterior at \$204; an 8 cu. ft. gross model with porcelain exterior at \$250; and a 10 cu. ft. gross model with porcelain exterior at \$303.

Leonard

Leonard Refrigerator Co.
14250 Plymouth Road, Detroit, Mich.

Vacation temperature setting, easy-cube tray, and a rearrangement tray are the principal new convenience features incorporated in the 1934 line of Leonard electric refrigerators.

Ten models comprise the line. Five of the models are finished in white lacquer, ranging in net capacity from 4.35 to 7.21 cu. ft. Remaining models are finished in porcelain, with capacities ranging from 5.88 to 10.6 cu. ft.

Cabinet design has been altered, with curves supplanting the former almost square corners. At the top, the refrigerator walls round over into a flat service top. Legs are now integral parts of the side walls. In the front and back, as well as on either side, the cabinet arches gracefully from leg to leg.

The Len-A-Dor, foot pedal door opener, has been redesigned to permit "hair trigger" action.

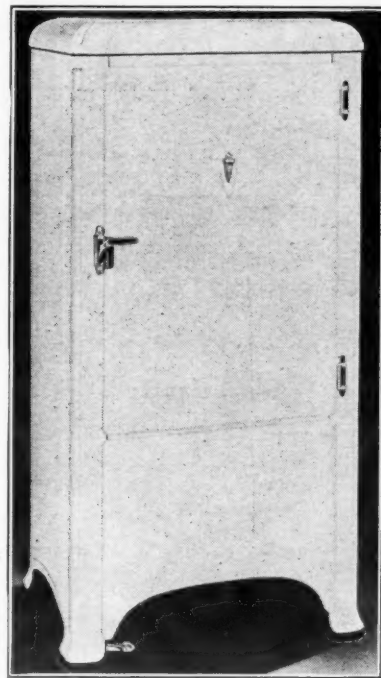
All-porcelain evaporators have been centered. Door to the cooling unit is of new design, with two-tone chromium finish. New and heavier springs are provided to insure positive closing.

The control panel is located at the top of the cooling unit. New Chillometer provides 12 freezing speeds, and has a position marked "vacation" temperature, at which the mechanism can be set to maintain adequate temperatures with a minimum of current. The Steady-Kold defroster, introduced a year ago, has been retained.

Standard in nine models of the line

is a refrigerated shelf. The refrigerant is concentrated under this shelf, which is located in the upper part of the cooling coil.

Other features include the "easy cube" rubber grid ice cube tray, double depth trays, an ice tray lifter,



dairy basket, automatic electric light, vegetable crisper, rearrangement tray-folding shelves, rubber-covered bronze shelf supports, semi-concealed hardware in chromium finish with glossy black inlay, and balloon-type rubber gaskets.

Liberty

Liberty Refrigeration Corp.

237 Georgia Ave., Providence, R. I.

Liberty's line of household refrigerators this year are equipped with the new Seeger cabinets, with paneled front, and finished in either porcelain or Dulux. Insulation in these cabinets is Multicel.

Features of the new line include automatic electric light, foot pedal door-opener, removable sectional shelves, "free-wheeling" door latch, and a "chill" tray.

Evaporators are centrally located and are made of porcelain. The cold control has an automatic overload cut-out and multiple setting temperature control, quick-freezing and semi-automatic defrosting features.

There are eight models in the line. The 4.1 cu. ft. net capacity model with lacquer exterior lists at \$108, with Dulux finish at \$125. The 5.1 cu. ft. model with Dulux finish retails at \$172, with porcelain exterior at \$191. The 6.2 cu. ft. model in Dulux lists at \$196, and with porcelain exterior at \$222. The 7.5 cu. ft. model sells for \$236 with Dulux finish and at \$264 with porcelain.

All models are equipped with the Liberty reciprocating compressor using methyl chloride as the refrigerant.

Kelvinator

Kelvinator Corp.

14250 Plymouth Road, Detroit, Mich.

Cabinet styling of an advanced nature and a number of new "convenience" features are incorporated in Kelvinator's 1934 household line.

Four distinct series of models, comprising 16 different units, make up the line.

The deluxe series embodies the largest number of models, the six cabinets in this group having a capacity range of from 6.53 to 23.32 cu. ft. The "P" line includes four porcelain-finished models ranging from 5.13 cu. ft. to 8.73 cu. ft. An "S" line of three models of 5.29, 6.35, and 7.54 cu. ft., and an "N" line of 4.22, 5.29, and 6.43 cu. ft. capacities, complete the array of household models.

The deluxe, the "P", and the "S" lines have styled cabinets, the rounded edges of the flat table tops flowing gracefully into the side panels and flowing down to the lower part of the cabinets. Embossed panels on the sides and a raised panel on the door lend further distinction to the cabinet lines. Legs are built as an integral part of the frame.

Chief among the new features is the "food filing" system incorporated in all models of the deluxe line. This consists of three entirely separate refrigerated drawer-like compartments suspended from the lower shelf in the food compartment. Dairy foods, vegetables, and leftovers are thus provided with classified storage space.

A new "five purpose" control is a feature of the lower-priced lines. This control consists of two toggle switches and a temperature selector knob. Provided by this refinement is start and stop overload protection, 12 freezing speeds, a vacation minimum operation setting, fast freezing start, and automatic return from defrosting.

To simplify the process of removing ice cubes, an ice tray lifter has been devised to remove trays which have frosted tight to the cooling unit. In addition, "P" and deluxe models are

equipped with a rubber ice cube tray which is built around a spring steel wire frame. A specially constructed



handle enables the user to bend the tray so as to spring out as many cubes as desired.

Other features of the new Kelvinators are balloon-type door gaskets, rubber shelf supports, porcelain-covered cooling units, high side float control, finger tip latch, dairy basket, rearranging shelf, improved hardware, and (deluxe models only) a 72-oz. water pitcher.

M & E

Merchant & Evans Co.

21st & Washington Aves., Philadelphia

Styled cabinets with an attractively paneled front, made by Seeger, are a principal feature of the 1934 Merchant & Evans line of household electric refrigerators.

Seven models comprise the line. A 4.07 cu. ft. net model with lacquer exterior lists at \$117; the same size model with Dulux exterior lists at \$128; a 5 cu. ft. model with Dulux exterior lists at \$169.75, with porcelain exterior at \$191.50; the 6.17 cu. ft. model in Dulux lists at \$201.50, with porcelain exterior the price is \$232.50; the 7.41 cu. ft. model is available with porcelain exterior only, and it sells at \$272.50.

All but the two smallest models have an illuminated interior and all but the lowest priced models have a foot-pedal door opener. Evaporators are centered. Multicel insulation is used in all cabinet construction.

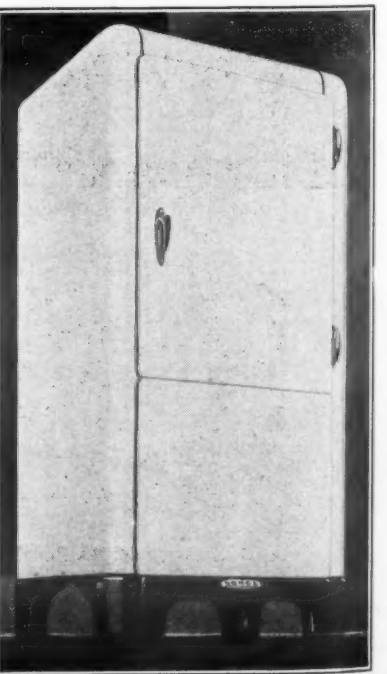
"M & E" household systems are of the conventional type, with reciprocating compressor. Sulphur dioxide is the refrigerant used.

Norge

Norge Corp.

670 E. Woodbridge St., Detroit, Mich.

There are 14 models in the refrigerator line which Norge Corp. has for



its dealers to sell this year, seven standard models and seven in the deluxe group. Until late in February, there were only three standard models, but at that time three all-porcelain models for this line were placed in production, and another low-priced model.

Newest feature of the standard line is its styling. The cabinet has the straight lines and curved edges and top which marked the company's deluxe line in 1933. Front of the cabinet is paneled, and legs (in either black or white) are short and stocky. Net capacities range from 4.4 cu. ft. to 7.1 cu. ft.

The three new standard all-porcelain models are exactly like the original three in the standard line except for their porcelain exterior (Concluded on Page 8, Column 3)

They Came ... They Saw! THEY BOUGHT!

STEWART-WARNER

Refrigeration Line Meets Instant, Enthusiastic Reception of New Distributing Organization!

Dealers, Also, Who Have Seen the Line Give Tremendous Ovation to the Host of New-Type Features. "They Will Literally 'Demonstrate' Themselves Into Sales."

DURING the past 8 weeks, distributors by the score have come to the great Stewart-Warner plant to see a sensational new Refrigeration Line. They came! They saw! They bought!

That is the quickest way to tell the story. Such instant and enthusiastic reception of a line, by such a large group of experienced refrigeration distributors, has never been known before. Dealers who have seen the line to date confirm this enthusiasm also by their wonderful reception of the great selling features incorporated.

The amazing ovation given these new Stewart-Warner Refrigerators at the Distributor Conventions resulted in advance orders far exceeding expectations. There was a feeling of confidence that the Stewart-Warner Refrigeration Line for 1934 FORECASTS PROFITS FOR STEWART-WARNER DEALERS MORE GRATIFYING THAN DREAMED OF HERETOFORE!

There's no doubt about it! The Stewart-Warner refrigeration engineering staff HAS PRODUCED A TRIUMPHANT LINE OF FAST-SELLING, SOUNDLY ENGINEERED REFRIGERATORS.

New-Type Features Which Practically Do Your Selling for You!

FEATURES? Only 3 are illustrated here. There are a dozen others. Any one of them is appealing enough to found a whole sales campaign upon.

And tucked away where it cannot be demonstrated, except by years of economical service in the home, is an amazing new twin-cylinder, slow-cycle compressor. An entirely new mechanism—rugged—over-size—this feature means greater serviceability, longer life, less servicing, less current consumption.

Every feature of these new Stewart-Warner Refrigerators is advanced—new-type—ahead of its time!

Your sales talk moves swiftly from one surprising feature to another. Your prospects will find themselves agreeing with you quickly that here is a refrigerator that has EVERYTHING.

Here, then, is a highly competitive line. In Quality! In Price! In Finish! In Eye Appeal! In Performance! In Rugged Serviceability!

AND PERHAPS THE GREATEST FEATURE is that the whole sales set-up is built to help you, as a dealer, make gratifying profits. We can't make money unless you do. For this reason, therefore, the franchise is written with you definitely in the picture as a partner in profits!

So little of this profitable story can be told in this space that we suggest, for your own sake, that you hear it all. Write today! No obligation.

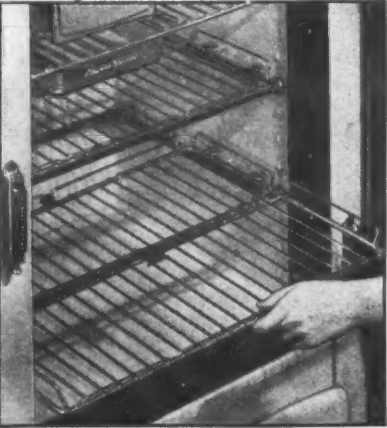
This finger points to the first part of your demonstration—the "Feather-Touch" Door Opener. The slightest pressure causes the door to swing wide open. Can be locked when children are about.



This "Forget-Proof" Defroster and Fast-Freezer wins women's approval at once. A new-type automatic control which makes it impossible to forget to return refrigeration to normal cycle after either operation.

WRITE TODAY!

Hear a New Story of Refrigeration Profits!



These easy-gliding, roller-bearing shelves, removable at a touch, may be taken out and used as trays.

Designed for all types of overseas conditions. Furnished in all frequencies and voltages. Applications for distributorships from responsible organizations in other countries invited. Cable Address—Speedmeter, Chicago, Ill., U. S. A.

Stewart-Warner Radios, Headed by Sensational "Magic Dial," Set New Pace for Sales and Profits!

Because Stewart-Warner Radios are the best engineered in the field, they have set the stiffest competitive pace in radio history during the past 8 months. Complete line in rich cabinets, from small "companion" sets to Double Superheterodynes with 12 tubes! Long and Short Wave Reception in all sets, headed by the REAL "ROUND-THE-WORLD" PERFORMER—the "Magic Dial"—pioneer in world-wide reception for the home. WRITE FOR ATTRACTIVE, SPECIAL "DEALER DEAL"! Put new life in your radio business!

STEWART-WARNER CORPORATION, 1841 Diversey Parkway, Chicago, Ill.

CROSLEY OFFERS

Streamline Beauty

MORE features . . . more usable space . . . the Crosley Shelvador Electric Refrigerator with eye-catching STREAMLINE BEAUTY will surpass its record-breaking sales success of 1933. Sweeps aside competition. A marvelous opportunity for greater sales.

Crosley Tri-Shelvador Electric Refrigerator exceeds the fondest dream of those interested in home electric refrigeration. There is nothing like it! Its design is startlingly new . . . its advantages strikingly apparent. Can't help but attract customers. Answers every refrigeration need.

In addition to STREAMLINE BEAUTY and the extremely popular SHELVDOR, the new Crosley Tri-Shelvador models have features which add immeasurably to their selling attractiveness and to the convenience of the housewife. The Shelvatray, Shelvabasket, Storabin are exclusive Crosley features which greatly increase the "usable" space and put Tri-Shelvador in a class by itself.

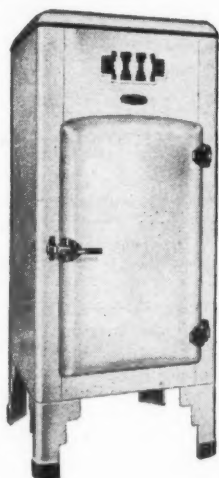
The sales possibilities of Tri-Shelvador are almost unlimited. It means quick ready sales for Crosley dealers . . . opens the way to better refrigeration business.



(UNITED STATES PATENT RE-ISSUE NO. 19,008)
(OTHER PATENTS PENDING)

MODEL EA-43

Designed for apartment or home. NET capacity 4.3 cubic ft., with 9.15 square ft. of shelf space. Shelvador greatly increases "usable" capacity. Two ice trays, each of 21-cube size; total 42 cubes. Also one double depth tray. No-stop defrosting control; will defrost while operating. Thoroughly insulated throughout. Stamped brass, chromium plated hardware of modern design. Porcelain interior; exterior in white lacquer with black trimmings. Ventilated front. Illuminated interior. Dimensions: 54 1/16" high, 23 7/8" wide, 24 1/16" deep. Price—delivered, with one year free service. **\$117.00**



This Crosley Shelvador Electric Refrigerator (shown open to right) has a NET capacity of 3.5 cubic ft., with 7.5 square ft. of shelf space. Two ice trays, each with 21-cube capacity, or 42 cubes in all. No-stop defrosting control, will defrost while operating. Thoroughly insulated body and door. Porcelain interior. White lacquer exterior with black trimmings. Stamped brass hardware is chromium-plated. Ventilated Front . . . refrigerator may be placed in a limited space or close to wall. Illuminated interior.

Dimensions: 48" high, 23 7/8" wide, 24 1/16" deep.

ALL MODELS HAVE AUTOMATICALLY ILLUMINATED INTERIOR



VENTILATED FRONT

This important feature of all Crosley 1934 models greatly improves the operating efficiency by drawing in cool air from the front and expelling it from the rear, insuring perfect ventilation of the power unit even when the refrigerator is placed in a limited space or close to wall. It makes for better performance and less current consumption.

MODEL EA-35

only \$99.50

1 THE SHELVDOR . . . the biggest sales feature in refrigeration. Increases "usable" space about 50% over rated capacity. Think of the price advantage to the Crosley dealer who can sell on a comparative basis of "usable" space. Think of the convenience to the housewife, whose "reach-and-hunt" days are over.

2 THE SHELVDOR . . . when you want what is behind the chicken, merely put Shelvatray in a level position, put the chicken on it and get what you want on Shelvatray (patent pending) an exclusive Crosley feature saves steps and "stoops." Just put what you want on Shelvatray and take it all—Shelvatray and all—to table or stove.

3 THE SHELVDOR . . . handy for greens, cabbages, carrots, and the like. Swings with door. A place for everything and everything in place. Exclusive, of course. Not refrigerated. (Patent pending.)

4 THE VENTILATED FRONT . . . increases efficiency and economy of power unit. Stops "churning" of warm air when refrigerator is placed close to wall or in limited space. Exclusive. (Patent pending.)

5 THE STORABIN . . . A place for potatoes and onions and other bulk items. Just another example of Crosley's scientific use of space ordinarily wasted. Not refrigerated. Exclusive. (Patent pending.)

The above are only SOME of the features. Get in touch with your Crosley distributor. See the new Crosley models.

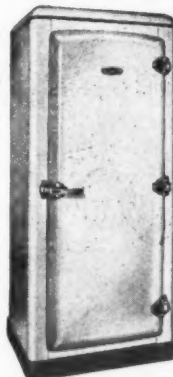


MODEL E-55

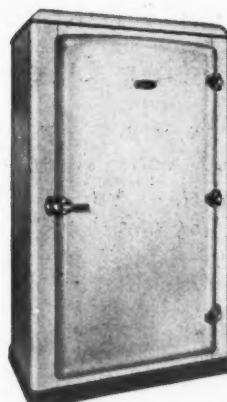
(Shown Open Above)

NET capacity, 5.5 cubic ft. Shelf space, 11.6 square ft. Features: Crosley Shelvador; Shelvatray; Shelvabasket; Storabin; self-closing door to ice-tray chamber; no-stop defrosting control, will defrost while operating; three 21-cube ice trays—63 cubes in all; one double-depth tray; thoroughly insulated in door and body; chromium plated hardware of stamped brass; porcelain interior; exterior in white lacquer with black trimmings; illuminated interior. Base rests on floor. Dimensions: 57 1/2" high, 29" wide, 25 1/4" deep. Specially ventilated front. **\$157.50**

MODEL E-43



MODEL E-70



NET capacity, 4.3 cubic ft. Shelf space, 9.15 square ft. Incorporates all features of Model E-55. Two ice trays, each holding 21 cubes—42 cubes in all—also one double-depth tray. Chromium plated brass hardware, porcelain interior, white lacquer black trimmed exterior. Base rests on floor. Interior illuminated. Dimensions: 56 1/16" high, 23 7/8" wide, 24 1/16" deep. Price, delivered, installed, one year free service . . . **\$135.00**

NET capacity, 7 cubic ft. Shelf space, 14.9 square ft. Incorporates all features of Model E-55. Has four 21-cube ice trays—84 cubes in all, and one double-depth tray. Hardware is stamped brass, chromium plated. Porcelain interior with white lacquer exterior trimmed in black. Base rests on floor. Dimensions: 58 7/8" high, 32 3/4" wide, 26 7/8" deep. Specially ventilated front. Price, delivered, installed, one year free service **\$185.00**



(UNITED STATES PATENT RE-ISSUE NO. 19,008)
(OTHER PATENTS PENDING)

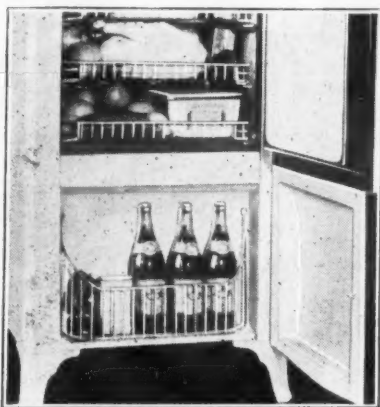
Montana, Wyoming, Colorado, New Mexico and west, prices slightly higher
The Crosley Radio Corporation - Cincinnati
(Pioneer Manufacturers of Radio Receiving Sets)
POWEL CROSLEY, Jr., President Home of "the Nation's Station"—WLW

ALL PRICES INCLUDE DELIVERY..INSTALLATION..ONE YEAR FREE SERVICE

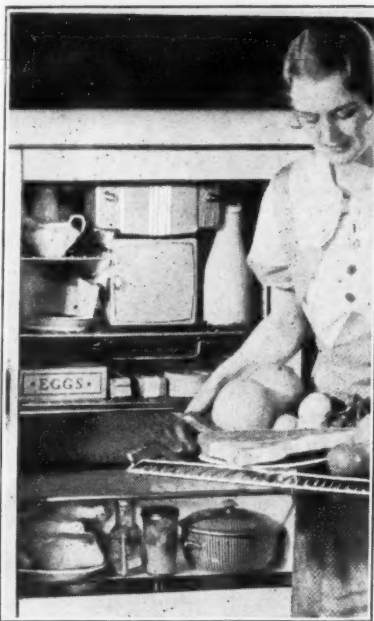
By Their Gadgets, Ye Shall Know Them!



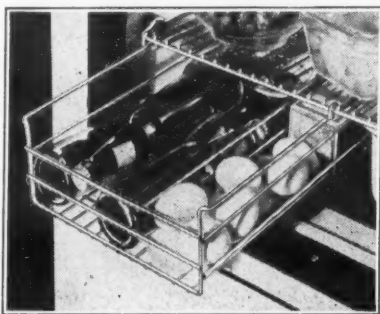
Norge's "lazy latch."



Mayflower's bottle compartment.



Stewart-Warner's roll-out shelf.



Leonard's bottle & dairy basket.

NEW EQUIPMENT

(Concluded from Page 6, Column 5)

finish, while the entirely new fourth model, S-44, has a conventional cabinet design instead of the styling of other standard models.

Appearance of the deluxe line, models of which range in capacity from 5.4 cu. ft. to 11.05 cu. ft., has been only slightly modified. The cabinets have the same streamlined appearance and deeply rounded edges and tops, but door corners have been more deeply rounded, and the food chamber door and compressor compartment door have been brought closer together. Improved "lazy latches" have been placed on the doors, too.

No basic changes have been made in the Norge rollator this year, but a number of refinements have been incorporated in it. The same condensing unit is used in both the standard and deluxe lines.

Prices on some Norge models have been revised upward since late January. Here is the complete schedule as of March 1 (recommended cash installed prices):

Standard line: S-44, \$109.50; S-47, \$129.50; SP-47, \$149.50; S-55, \$154.50; SP-55, \$174.50; S-71, \$189.50; SP-71, \$214.50. Numerals in the model designations indicate the net capacity.

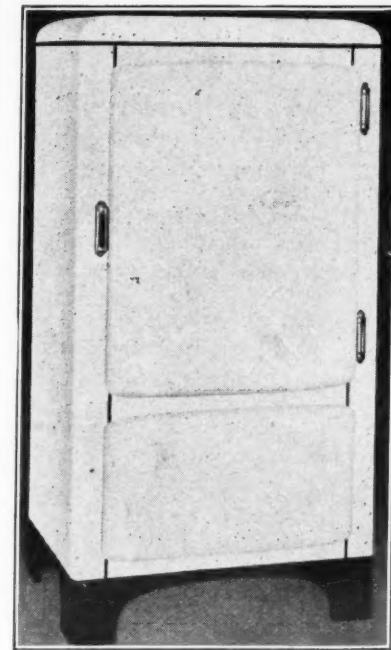
Deluxe line: L-54, \$179.50; P-54, \$199.50; L-67, \$214.50; P-67, \$234.50; P-78, \$279.50; P-91, \$339.50; P-110, \$389.50.

Stewart-Warner

Stewart-Warner Corp.
1826 Diversey Parkway, Chicago, Ill.

Stewart-Warner has two new lines this season—one standard, the other deluxe. In the former are three models, while the deluxe line comprises six models, three finished in lacquer and three in porcelain.

Cabinets of standard models are, on the exterior, exactly the same as those in the company's 1933 line. But the interior of these refrigerators is changed considerably. Each standard



model has embossed shelf supports (instead of hoods), and a porcelain evaporator centrally located.

In the deluxe group, cabinets are basically the same as those used last season, but have been given a streamlined appearance by use of concealed hardware and black legs, short and massive. There is no nameplate on these models, the manufacturer's name being stamped on the feather-touch door latch. These models have central evaporators and rolling shelves.

The company's twin-cylinder reciprocating compressor has been somewhat refined over that used last year, and is used in both the standard and deluxe lines.

Smallest model in the standard line is 454, with a net food storage capacity of 4.6 cu. ft., priced at \$129.50 f.o.b. factory. Selling at \$169.50 is model 554, with a 5.6-cu. ft. capacity. Largest of this line is model 704, with a 7.1-cu. ft. storage space, selling for \$197.50. All of these refrigerators are finished in lacquer.

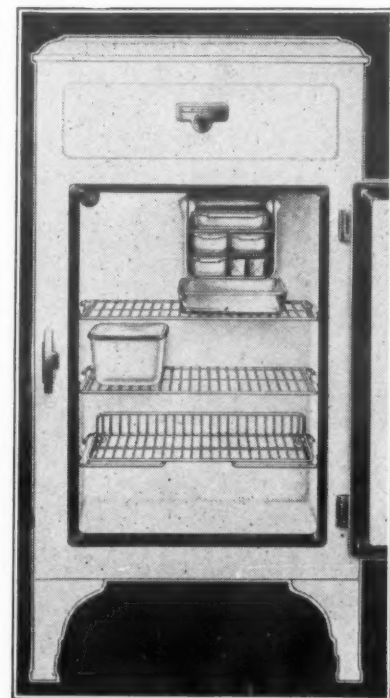
Lowest priced models in the deluxe line are also finished in lacquer. First is model 564-A, having a 5.6-cu. ft. net capacity, priced at \$219.50 f.o.b. factory. Model 714-A, with 7.1 cu. ft. of storage space, sells for \$244.50, and model 834-A has 8.3 cu. ft. of space and is priced at \$264.50.

Also in this line are three other models which are the same as the A models in construction and specifications, but are all-porcelain. Their prices: 564-AP, \$244.50; 714-AP, \$269.50; 834-AP, \$295.50.

Westinghouse

Westinghouse Electric & Mfg. Co.
Mansfield, Ohio

Thus far in 1934, Westinghouse has introduced no new refrigerator models, but is continuing the 12-unit line brought out last July under the name of "Master Series." The models range



in size from 4.2 to 20.1 cu. ft. net storage capacity.

All the models are conservatively styled, have a smooth-edged control panel and semi-concealed chrome hardware, with a vertical steel rib that may be pushed with the knee or pulled with a finger to open the food chamber door.

Each model has a seven-point temperature selector with an "Economic" operating position for preserv-

ing foods over a week-end or during a vacation when the family is gone. The evaporator is steel finished in porcelain, and all-steel construction is used in the cabinet.

Model BL-43 is smallest of the line, with 4.2 cu. ft. of net storage space. BL-45 and BP-45 have the same storage capacity as BL-43, but their depth is about an inch less, because they have conventional hardware.

Next come models BL-55 and BP-55, with a net capacity of 5.2 cu. ft. Models BL-65 and BP-65 have net storage space of 6.2 cu. ft., and BL-75 and BP-75 have capacities of 7.5 cu. ft. Models AP-90, AP-130, and AP-200 are the largest of the Master Series, with respective net capacities of 9 cu. ft., 13.5 cu. ft., and 20.1 cu. ft.

Wurlitzer-Mohawk

The Rudolph Wurlitzer Mfg. Co.
North Tonawanda, N. Y.

Graceful cabinet styling and incorporation of the Wurlitzer "duozone" cooling unit in all models mark the 1934 Wurlitzer-Mohawk line of household electric refrigerators.

Cabinets have rounded corners, arched cabinet legs. All but the two smallest models have paneled cabinet fronts. Cabinets are insulated with Temlok. Hardware is the semi-concealed type.

The "duozone" unit provides two separate refrigerating units—one for fast freezing and one for cooling the food compartment, the latter consisting of a thermostatically controlled non-frosting fin-type top coil. The temperature control can be adjusted to suit the needs or desire of the user.

Other features of the line include an evaporator door with spring hinges, bakelite shelf supports, ribbon type shelves, rubber door gasket, broom high legs, full-floating three-point coil condensing unit support, and built-in electric lights, which are shielded from direct view.

The line is comprised of seven models. A 4 cu. ft. net capacity model has a lacquer exterior; the 4.6-cu. ft. model has a lacquer exterior; the 5.8-cu. ft. model is available with both porcelain and lacquer exterior finishes, as is the 7.2-cu. ft. model; the 8.5-cu. ft. model is available in porcelain only.

Montana Distributor Buys Frigidaires in Dayton & Trucks Them Home

GREAT FALLS, Mont.—Distances mean little to R. J. Barber, president of the Barber Music House, Inc., Frigidaire distributor here.

When he suddenly received orders for a carload of equipment, he took the first train East, bought a four-ton truck on the way, loaded up a shipment of Frigidaire commercial equipment in Dayton, picked up some washing machines, and started right back for Montana.

None of the equipment, however, reached Great Falls. It was all for other towns in the big territory the Barber company serves, an area extending 400 miles east and west and 200 miles north and south of Great Falls.

Mr. Barber was accompanied on the trip by L. G. Zipperian of his own organization who stopped off on the way back to install commercial refrigeration equipment, which included beer coolers and cooling coils and compressors for stores and markets.

700 Dealers Attend Norge Meeting at Kansas City

KANSAS CITY, Mo.—Seven hundred dealers and salesmen from Kansas and western Missouri met recently at the President Hotel here for a meeting sponsored by Moser & Suor, Inc., Norge distributor in this territory, to see Norge Corp.'s 1934 products and hear new sales plans.

The program was conducted by John H. Knapp, vice president in charge of sales of Norge Corp.; R. E. Densmore, western sales manager; W. C. Rowles, southwestern district representative; Betty Appel, home economist; Walter Seiler, vice president of Cramer-Krasselt Co., Norge advertising agency.

Westinghouse Electric Kitchen Opens

CLEVELAND — The Higbee Co., Cleveland department store, has recently opened an all-electric kitchen in which Westinghouse equipment will be employed, according to Robert Johns, manager of the housewares department.

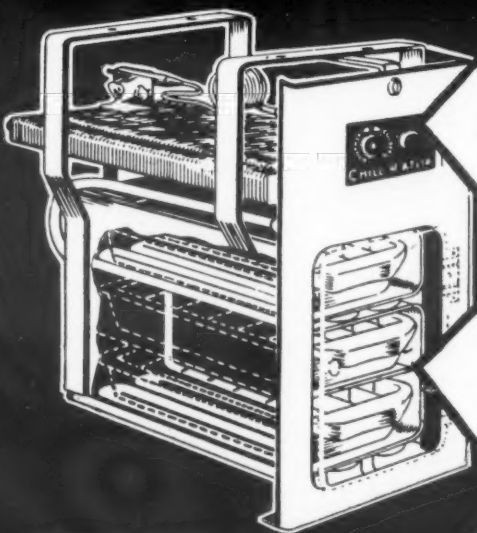
The kitchen has been constructed in a U-shape layout for demonstration purposes and is located on a stage in the kitchen auditorium of the housewares floor.

Working surfaces and wall space not covered by cabinets in the kitchen will be finished in Westinghouse Mica. Lighting will be recessed and indirect. Kitchen color scheme is ivory and buff with touches of red.

A PEACH and an ICE CUBE

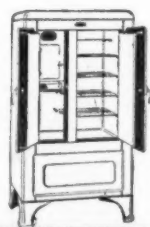
have nothing in COMMON

... That's why
they're **SOLD**
when they're told about
DUOZONE!



NOT JUST
ONE COIL
BUT 2*

Illustrated is just one of the popular models in new Wurlitzer Mohawk Duozone Refrigerator line.



THE Duozone Unit with its two separate refrigerating coils, is the greatest single selling feature any refrigerator dealer ever had. It breaks down sales resistance — gives you a sales story that sells!

Your customers want Duozone "Dual Refrigeration". They want its super-speed freezing of ice cubes and desserts — its safe, lasting protection for perishable foods without danger of excessive chilling or of freezing them.

They get that kind of refrigeration only in Wurlitzer-Mohawk Duozone. If a selling point like Duozone interests you—if you want a refrigerator line that's a selling line — backed by an institution with a record of over 78 years of continuous, successful manufacturing — if you want longer discounts that mean bigger profits—then send for the complete Wurlitzer-Mohawk Duozone story—and details on the liberal money-making franchise. Write, wire or mail the coupon TODAY!

THE RUDOLPH WURLITZER
MANUFACTURING COMPANY
North Tonawanda, New York

★ DUOZONE MEANS—
Longer, Safer Storage of Food
Maintains Moisture Content in Food
Compartment
No Excessive Chilling or Destruction
of Food.
Ice Cubes Frozen in less than an Hour

**WURLITZER
MOHAWK
DUOZONE
REFRIGERATOR**

The Rudolph Wurlitzer Manufacturing Co.,
North Tonawanda, N. Y.

Send me at once complete details on the Wurlitzer Mohawk Proposition for 1934!

Name.....Address.....

City.....State.....ERN 3-7

FIND OUT "WHAT'S INSIDE"

BEFORE YOU BUY ANY
ELECTRIC REFRIGERATOR

THE NEW

Grunow

*Refrigerator For The Home
Will Offer You
Sensational Advantages!*

THERE'S A NEW DAY IN ELECTRIC REFRIGERATION

This ad appears in the March 17, 1934 issue of the Saturday Evening Post—the first of a series carrying the most powerful refrigerator selling story of the year. Are you ready with the Grunow line? . . . Phone or wire your distributor now!

G-E Introduces New Coin-Meter Switch

SCHENECTADY, N. Y.—Designed specifically for connection between an electric refrigerator and its current supply, a new coin-operated automatic time switch has just been announced by General Electric Co. Purpose of the new coin meter is to disconnect the refrigerator unless certain stipulated payments are made periodically into the device.

The cord and plug are provided with and are a part of the coin switch. In installation, this plug is inserted into the usual wall or base-board receptacle in the home.

It is not necessary to destroy the cord on the refrigerator. Its plug is simply inserted into a receptacle which is found within the coin switch. This completes the connections. Placing the cover on the coin switch and locking it seals the switch.

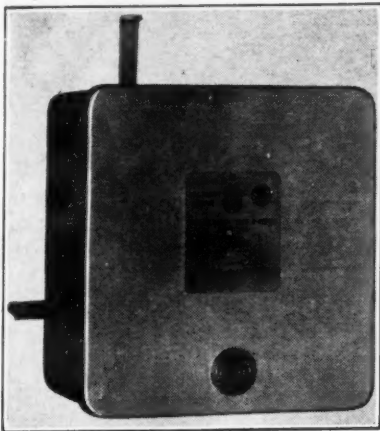
Coins (25c each) are credited by inserting them in a slot in the top of the coin time switch and depressing the lever. Coins can be credited up to the number of 15 in advance of use. The capacity of the coin switch itself is in excess of 100 coins. Dimes, nickels and pennies will not operate the switch.

The type TSC-5A is stocked in the 115 volt-60 cycle rating. All common voltages and frequencies are available on order. The standard time interval stocked is 24 hours which calls for one 25-cent piece per day. Other intervals available are 6, 8, 12, 15, 20, 24, 30, 40 and 48 hours. The change from one interval to another may easily be accomplished.

Approximate dimensions are: height 6 1/4 in., width 5 1/4 in., depth 4 7/16 in. Approximate weight is net 5 lbs., for shipping 7 lbs. The switch is finished in aluminum lacquer.

Prices applying to the 115 volt, 60

Time-Payment Switch



General Electric is marketing this new coin-operated switch described in column 1.

cycle, 24 hour interval type TSC-5A are 1 to 10 \$8, 10 to 100 \$7.50, 100 or more \$7.25. These prices are net each f.o.b. Fort Wayne, Ind.

Sets of gears for changing from one time interval to another may be had for 35c net each f. o. b. Fort Wayne, Ind. per set. To secure this price it is, however, necessary to order at least 100 sets of gears for any one particular set.

Buell Named Receiver For Zerozone

CHICAGO—Edwin D. Buell on Feb. 7 was appointed receiver of Zerozone, Inc. by Judge Lindley here. The new receiver has already taken possession of the assets of the company, according to the creditors' committee.

Puppets Play Part in Westinghouse School

MANSFIELD, Ohio—A talking motion picture enacted by Marionettes pointing out and speaking of the features of Westinghouse appliances and various foods is playing an important part in the Kroger-Westinghouse cooking schools now being held in major cities throughout the midwest.

The film opens with a typical husband-and-wife financial argument scene. Sleeping restlessly, the wife dreams of taking a shopping trip with her neighbor who, in the husband's opinion, is a wise buyer.

The dream trip is dramatized by two doll marionettes dressed as the women characters. They parade up and down on the store counters, inspecting the various food products. They then inspect Westinghouse refrigerators, ranges, and smaller appliances.

Conversation between the marionettes is cleverly worded sales talk, bringing out the selling points of the different products displayed. The film runs 478 feet.

Sound pictures and slides used in the presentations are scheduled for showing at clubs, luncheon meetings and other gatherings, during a period of two weeks following the close of the school in each city.

Greta Garbo Pictures Are Lure to Shoppers

DAYTON — Autographed photographs of Greta Garbo constituted the bait held out for shoppers during a recent sales drive on Norge refrigerators conducted by the Wurdlitzer store, local dealer for Norge refrigerators.

Newspaper advertising tied in with the local showing of "Queen Christina," the new Garbo picture.

A Refrigerator About to Become a Hero



Sally Eilers, in "She Made Her Bed," finds an electric refrigerator asafe refuge for her baby from wild animals and fire.

Electric Refrigerator Has Starring Role In New Movie

HOLLYWOOD, Cal.—An electric refrigerator is the "hero" in a Paramount pictures feature production titled "She Made Her Bed" soon to be released.

The picture is taken from the story "Baby in the Ice Box," short story which commanded considerable attention on its publication in one of the issues of *The American Mercury* last year.

Briefly, this is the story of how a modern electric refrigerator plays a "hero" role in the motion picture: A tiger escapes. It corners Sally Eilers and her baby (the real-life offspring of actor Richard Arlen) in a house. As the tiger is about to attack, Sally Eilers frantically opens the door of a big four-door General Electric refrigerator, pushes aside the food and places the baby inside the refrigerator. She closes the door, dodges the tiger just in time, as it leaps.

A lamp is upset, the building catches fire. Sally is forced to escape from the house, leaving the baby in the G-E as the building begins to burn.

As the fire dies down and the building from which Sally escaped is nothing but a mass of ruins, she and others rush to the refrigerator to find the baby inside unharmed.

Leonard Sales Manual Made in Pocket Size

DETROIT — Just issued by the Leonard Refrigerator Co. here as the backbone of its selling tools for retail men in 1934 is a little sales presentation manual which differs from the average run of such publications in that it is pocket size, is of the loose leaf variety, and has its binding edge at the top instead of at the left.

First 20 pages of the manual present specific features of the Leonard refrigerator, each leaf picturing one feature and describing its advantages in a single terse paragraph. Remainder of the book shows all models of the 1934 line, and gives their key specifications. Extra pages may be inserted in the book simply by placing them on the rings from which the pages swing.

Home Economists Develop Kelvinator Pastry Set

DETROIT—Kelvinator home economists have developed the "Kelvinator Pastry Set" to meet the problem of using utensils and ingredients cold enough to make tender, flaky pastry.

The set is especially designed for use in a refrigerator and consists of a bowl and a rolling pin. The bowl is made of pottery, has a tightly fitting cover and two handles.

The bowl is placed on next to the bottom shelf of the refrigerator, and retains its "coldness" for some time. The bowl is also an aid in preparing ices and sherbets when the recipe calls for their removal to a chilled bowl for additional beating.

A hollow pottery rolling pin completes the set. It can be filled with water, placed in the defrosting tray, and in a short time is chilled to the desired temperature.

32 C. A. Coffin Awards Given to G-E Employees

SCHENECTADY, N. Y.—Recognition of achievement by 32 employees of the General Electric Co. was given in awards made by the Charles A. Coffin Foundation to 32 men on the company's payroll recently. The citations are for contributions during 1933 to the progress of the company and advancement of the electric art.

The awards were divided among 10 engineers, seven factory foremen, five shop workmen, four commercial men, three tool designers and expert machinists, two administrative employees and one construction engineer. Seven of the awards, one a joint citation of three men, relate to General Electric's refrigerator. Three others are concerned with the Thyatron tube. Three others have to do with the incandescent electric lamp, and three joint awards go to men who handled General Electric's exhibits at the Century of Progress exposition.

Each citation consists of a certificate and a cash award. The foundation has been making awards of this sort every year since 1922, when it was established by the board of directors of General Electric as a tribute to the late Charles Albert Coffin, founder of the company and its first president.

The joint award for work done at A Century of Progress went to William A. Gluesing, who conducted the demonstration lectures of the House of Magic; Kenneth R. Ross, service contact man; and George E. Simons, publicity contact man.

Loyal V. Bewley, engineer in the power transformer department at Pittsfield, Mass., was cited for a new mathematical theory which aids engineers in safeguarding transmission lines from lightning.

Thomas O. Moffit, a foreman in the Newark lamp works, won an award for devising a process which practically eliminates white streaks and spots on the globes of automobile lamps.

S. R. Bergman, consulting engineer at the River Works, West Lynn, Mass., was honored for devising a new type of bucket made by G-E for rayon manufacturers.

Guy S. Purvis, construction engineer of the Chicago office, received an award for his emergency work in restoring to service the municipal electric plant of Rensselaer, Ind., following a severe cloudburst and flood last spring, during which job he put in an average of 22 hours a day for a week, and saved a man's life in a gasoline fire.

Frank M. Clark, physicist in the laboratory of the Pittsfield works, was cited for development of Pyranol, a non-inflammable and non-explosive liquid used as a substitute for oil in insulating transformers.

McGinty Aids Electrolux Field Organizations

NEW YORK CITY—A. J. McGinty, for the past five years assistant advertising manager of Electrolux Refrigerator Sales, Inc., with headquarters here, has been promoted to do sales education work among Electrolux distributors in all sections of the country.

Mr. McGinty's appointment was occasioned by the demand of gas utilities for assistance in training their salesmen in Electrolux selling.



GENTLEMEN,
GENTLEMEN
*your attention
please!*

YOU in the four hundred local Electric Refrigeration Bureaus, you exclusive electric refrigerator dealers and distributors, you electrical and hardware and house-furnishing men who sell electric refrigerators, you central station men, you department store men. *Attention, please.*

The good work the Electric Refrigeration Bureau has done in aiding you in the past three years to record-breaking sales of electric refrigerators continues.

Its field men are hard at work among you promoting ideas for sales stimulation. Their services are available and await a request from you. A program of spring sales promotion will soon be announced.

Bureau newspaper advertising and other promotional aids are still available. The central office is eager to help you with ideas and the experience in hundreds of cities on all phases of cooperative electric refrigerator activities.

We want to help. Call upon us when you are ready.

ELECTRIC REFRIGERATION BUREAU

Edison Electric Institute

420 Lexington Avenue, New York City



G-E Contracts Corp. Opens New Offices

NEW YORK CITY—Three offices have been opened by the General Electric Contracts Corp. for the Atlanta, Pacific coast, and Kansas City districts.

F. H. Denslow, previously at headquarters of the company in this city, has been named manager of the Kansas City district, with offices at 106 W. 14th St., Kansas City, Mo. His territory includes Kansas, Nebraska, Colorado, and parts of Iowa, Missouri, and Wyoming.

J. C. Sauer, formerly manager of the Philadelphia branch, is manager of the Pacific coast district, with offices at 235 Montgomery St., San Francisco. Oregon, Washington, Nevada, Idaho, Montana, Utah, Arizona, and part of Wyoming are included in his territory.

H. W. Krebs, formerly at headquarters, has been appointed manager of the Atlanta district, with offices at the Red Rock building, Atlanta. His territory comprises North and South Carolina, Georgia, Florida, and Alabama.

In addition to the three new district offices, the company now has offices in Chicago, New York City, Schenectady, N. Y., Philadelphia, Cleveland, Richmond, Va., New Orleans, Cincinnati, Columbus, Ohio, Louisville, and Dallas, Tex.

Offices are to be opened soon in Pittsburgh, Detroit, Los Angeles, and St. Louis.

Indiana Grand Jury Hits Utility Selling Practices

CROWN POINT, Ind.—Merchandising practices of the Northern Indiana Public Service Co. in the retailing of electrical appliances has been condemned by the grand jury sitting here which recently indicted seven prominent utility operators connected with the Northern Indiana company.

"Our investigation," says the grand jury report, "discloses that the sale of appliances was carried on at a loss and such loss charged to 'new business expense' at the same time that the Utility Finance Co., another Insull company, was making about 21 per cent on the financing of these appliance sales."

"Merchandise sales made by utilities reduce the volume of sales and profits of legitimate dealers who pay taxes for the privilege of doing business and cause added expense to the company, which finally is saddled onto the consumers, who are obliged to pay, in their rates, for large sums spent for the promotion of business."

"We recommend a thorough investigation of this subject by the state of Indiana so that ratepayers may be benefited by lower rates and dealers and workmen protected from unfair competition."

Norge Adds 700 Workers At Muskegon Plant

MUSKEGON, Mich. — During the past fortnight, 700 employees have been added to the working force in Norge Corp.'s refrigerator cabinet and companion-appliance plant here, according to Norge officials.

Orders on hand are 800 per cent ahead of those booked at the same time last year, and shipments already made are 300 per cent greater than those of the comparable period in 1933, according to Herbert Morley, plant manager.

Production at Inland Plant Sets New High

DAYTON—To facilitate the handling of raw material the Inland Mfg. Co., manufacturer of rubber ice cube trays and rubber accessories for the automobile industry, has leased 15,000 sq. ft. of space from a lumber company whose yards adjoin those of the Inland plant here.

With 1,500 persons at work, an all-time production peak has been reached at the Inland plant, according to Wallace Whitaker, president.

Cunningham Is Manager For W. L. Thompson, Inc.

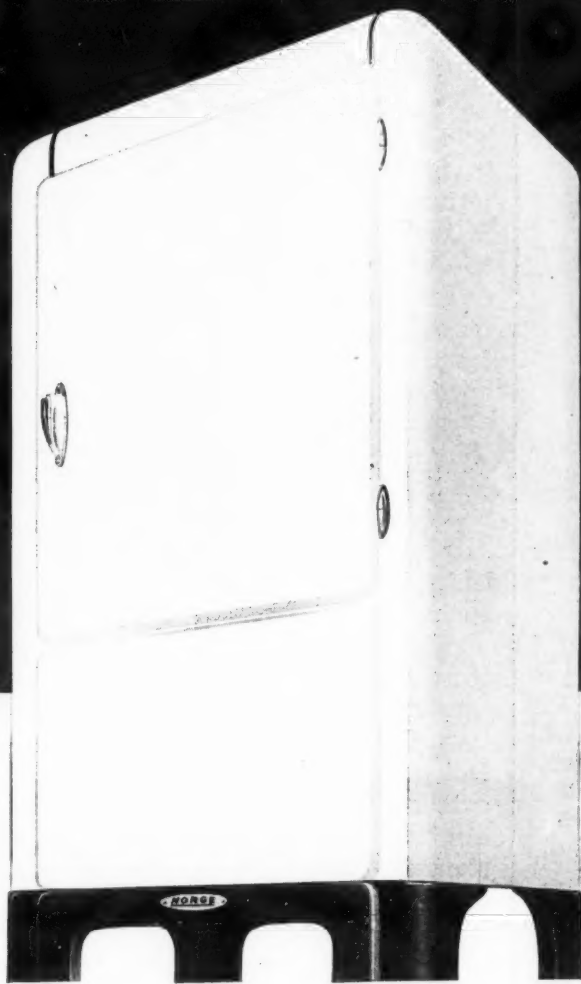
BOSTON — Frank V. Cunningham has been appointed wholesale manager in charge of all wholesale operations for W. L. Thompson, Inc., General Electric distributor here.

Mr. Cunningham has been identified with appliance selling in this territory for the past 10 years.

McCaughna Will Manage Norge N. Y. Organization

NEW YORK CITY—A. D. McCaughna, formerly with the sales department of Norge Corp. in Detroit, and more recently connected with the Budd Mfg. Corp., has been appointed general manager of the newly organized Norge Corp. of New York.

SEE THE NEW NORGE
before
YOU SIGN

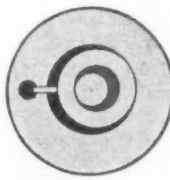


You

expect great things of Norge. Its success has been

continuous and spectacular. Norge dealers have piled up new sales records and won steadily increasing profits, year after year and month after month; they would *never be satisfied* with half-way measures. • The new Norge will meet your fullest expectations. It offers many advantages that herald new and greater Norge triumphs, that promise *still greater* profits for Norge dealers. • New dependability and durability have been built into the new Norge. The Rollator, exclusive Norge cooling mechanism—the great outstanding advantage in refrigeration—has been refined, putting it still further in advance. • Long ago, Norge *set the pace* in refrigerator design, and the advanced, classic beauty of the Norge is *more* appealing

than ever in the new models. To this beauty is added, in leading models, such conveniences as adjustable shelves, handy egg basket, butter and cheese rack, frozen-dessert tray, Hydrovoir for freshening fruit and vegetables, ice trays that always slide out easily, an interior automatically lighted as the door is opened, and an improved door latch that opens at a touch. • The practical, efficient type of cooperation given Norge dealers is evidenced in the Norge franchise—in Norge *dealer success*. • See the new Norge before you sign. Write, wire or phone.



THE ROLLATOR • Smooth, easy, rolling power instead of the hurried back-and-forth action of the ordinary refrigerator mechanism. Results—more cooling power for the current used, and a mechanism that actually improves with use. Only Norge has the vital, exclusive advantage of the Rollator.

NORGE CORPORATION; DIVISION OF BORG-WARNER CORPORATION, 606-670 EAST WOODBRIDGE STREET, DETROIT, MICHIGAN
Norge Rollator Refrigeration • Electric Washers • Broilator Stoves • Aerolator Air Conditioners

NORGE

Rollator refrigeration



ELECTRIC REFRIGERATION NEWS

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The Newspaper
of the Industry



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VOL. 11, No. 10, SERIAL NO. 259, MARCH 7, 1934

Public Utilities May Stage Comeback

A COMEBACK on the part of public utilities during 1934 is being predicted by a number of leading sales executives this year. Ever since the state legislatures of Kansas and Oklahoma prohibited public utilities from selling appliances, the utilities—which once were the leading merchandising factor in the refrigeration business—have taken a back seat. Now, however, it appears that there are at least three influences which may bring the central station merchandising departments back into prominence.

First of these influences is the industry's corps of field representatives, each of whom is under orders from headquarters to extend his dealer organization. Many of the larger manufacturers are driving this year for better coverage of the rural markets, which have been woefully neglected in times past. When Crosley sold more than 50,000 refrigerators last year—70 per cent of which went to small towns and rural sections—the industry sat up and took notice. And those in authority decreed that in 1934 the small town market must be cultivated assiduously.

Public utilities are thus placed in an exceedingly fortunate position. With offices and display facilities in thousands of crossroad hamlets which they serve, they can offer a manufacturer rural distribution ready made and hand-picked. If a field representative is able to get a utility to take on his refrigeration line, and display it in all of its small-town offices, his assignment is done—quickly and economically.

To spur these utility outlets to a satisfactory sales volume is "something else yet again, Mawruss," as Abe Potash would have said to his partner, Mr. Perlmutter. But here is where the other two "influences" enter the picture.

Second of these "influences" is the necessity with which the utilities are faced of increasing their income, so that they can shoulder their rapidly increasing tax burden and still meet the demand for reduced rates.

As F. A. Newton of the powerful Commonwealth & Southern Corp. puts it:

"With taxes going up, and rates going down, there is but one way for utilities to maintain a satisfactory income: they must make every effort to place more current-consuming appliances in the homes and stores of the country, and to increase the use of electricity by all industries."

Taxes on utilities have been raised during the last year to the point where it has been estimated that 27.5 cents out of every dollar earned by gas and electric companies is absorbed by taxation.

Coincident with the tax problem, pressing demands for rate cuts are being made throughout the nation; and many such cuts, both voluntary and involuntary, have been made. Los Angeles Gas & Electric, for instance, was forced by a United States Supreme Court order to reduce its rates last May. Southern Utah Power

Co. announced reductions about the same time, followed shortly by Commonwealth Edison, and by utilities operating in Michigan, Kentucky, and Alabama.

The recent rate cut placed in effect by the powerful Georgia Power Co. is significant, because Georgia Power may be in competition with the TVA (Tennessee Valley Authority), which is using the mighty Muscle Shoals power plant (plus other superpower generating stations now in the process of construction) as a club to beat down power rates all over the country.

All these things, of course, are making utility operators acutely cognizant of the need to build up their revenue. More juice-consuming appliances on their lines is one of the most obvious answers to this dilemma.

Third "influence" toward more aggressive merchandising of electric appliances by central stations in 1934 is the fact that prohibitory legislation no longer seems to be the "big bad wolf" at the door of the light and power companies. Last year, for instance, a Texas court of appeals held that "the sale of gas and electric appliances is within the power of a public utility as incident to a public utility's principal business of manufacturing, supplying, and selling gas and electricity to the public for heating, lighting and power purposes," and dissolved an injunction restraining the San Antonio Public Service Co. from purchasing and selling gas and electric appliances.

Furthermore, the noted Kansas anti-utility-merchandising law was declared unconstitutional by the Kansas state supreme court last June. Not for a long time have there been any rumors current that other states might attempt to legislate the utilities out of the merchandising business.

Since they have had a taste of department store merchandising tactics, dealers and distributors are inclined to feel more kindly disposed toward public utility sales departments. Manufacturers, too, have learned that large retail outlets such as furniture and department stores can be just as difficult to deal with as the central stations. They have also learned that the afore-said large retail outlets are not so apt to consider quality as are the utilities.

All in all, the situation seems more favorably disposed toward public utility merchandising of electrical appliances in 1934 than it has in any year since 1930. The power companies need desperately the additional load which more appliances on their lines could bring. The manufacturers want more widespread distribution. The dealers are less critical. It all seems quite auspicious for the central station merchandising manager.

WHAT OTHERS SAY

Your Code Is What You Make It

THIS week and next should be memorable ones in American industrial history. They will probably determine whether or not industry is capable of self-government.

Following nine months of mental and physical travail which gave birth to so many codes, we are asked to critically examine the fruits of these labors. To this end are the current NRA conferences in Washington.

At the start, many of us doubted and opposed the idea of codification because we felt that it was a step toward regimentation and bureaucratic regulation. That it was putting Government into business and to stay.

It is obvious now, in the light of events, that the purpose of NRA is to put government into business but not Government. That little difference between a small and a capital letter is a mighty big one.

The initiative had to come from Government. Industry was not so organized as to be able to take it. Hence the NRA. At first, it looked like the establishment of an industrial dictatorship or at best the setting up of a powerful bureaucracy.

There is this vital distinction, however, between the characteristics of General Johnson's organization and a bureaucracy. The latter never gives up any powers that it gets and it continually reaches for more. The NRA is bending every effort to fit industry to do for itself what is now being done for it.

We hope and believe that the great gathering in Washington of code spokesmen chosen by industry and business as their representatives will go far to further the purpose of NRA to make industry self-governing to the greatest possible degree and as soon as possible.

There are naturally rough edges in our various codes. But now we are invited to disclose them and have the friction points smoothed away. That is a challenge to constructive cooperation that no fair-minded man can refuse to accept.

Your code will be what you make it.—*The Iron Age*, March 1, 1934.

LETTERS

Used by Students

Detroit Public Schools
Cass Technical High School
2421 Second Boulevard
Detroit, Michigan
March 1, 1934.

Editor:

I have your letter of Feb. 26 and the announcement of the 1934 REFRIGERATION DIRECTORY AND MARKET DATA BOOK. As you perhaps know we are using both the MARKET DATA BOOK and the ELECTRIC REFRIGERATION NEWS in our Evening School classes at Cass. I have been subscribing for this material for the benefit of our students in our classes because I thought it was very much worth while for them to have. It is difficult for us to solicit subscriptions to any publication in our classes. In fact, it is a strict rule in the Board of Education that we can not do it. However, I feel that if the students become acquainted with the REFRIGERATION NEWS and DATA BOOK, no doubt they will subscribe for the publication. We will place the information concerning it in their hands and if they want to make a group subscription, we will let you know.

Please continue our subscription for our REFRIGERATION NEWS and MARKET DATA BOOK.

A. D. ALTHOUSE,
Department Head.

Fink Retires

Grunow Products Sales Co.
972 Broad St., Newark
Feb. 14, 1934.

Editor:

Through a mutual arrangement with the General Household Utilities Co. and the Grunow Products Sales Co., the Grunow line of refrigerators is now being distributed in northern New Jersey by Bruno-New Jersey.

After an active career of more than 12 years in the radio and electrical refrigeration field, I am temporarily retiring from this field of business.

I want to take this opportunity to thank all of my friends in the trade for the many years of close friendships that I have enjoyed with them.

It is the writer's sincere hope that when he again enters active business operations that it may be in the field that he, and his associate, B. L. Reichman, assisted in promoting over 12 years ago, and that the many mutual friendships that have been built up may again be renewed and established in a stronger spirit than that of the past.

I will always be very glad to keep you advised of my future activities.

HERBERT FINK.

Mistake Brings One More Sale for Dealer

HOUSTON, Tex. — O. P. Beeman, salesman for Cox & Blackburn, Frigidaire distributor here, now believes firmly that some mistakes are profitable.

Recently, he received a telephone call from E. J. Anthony, who informed the salesman that he had just moved into a new home, and wanted a Frigidaire. That was all Salesman Beeman wanted to know. He looked up Mr. Anthony's address, put on his hat and coat and rushed from the store.

Imagine his surprise when it took 40 minutes of fast selling to get Mr. Anthony to buy a Frigidaire Super 63. Back in the office, Beeman got a second telephone call. Mr. Anthony was very much put out by the salesman's non-appearance.

This time Beeman got the correct address, paid Mr. Anthony No. 1 a visit, and sold a Super 73.

Suspension of 'Open Price' Code Provisions Would Not Affect Industry

WASHINGTON, D. C.—The possibility of suspension of the open price provisions in NRA codes for industry will not have any immediate effect upon the electric refrigeration industry although the code for the electrical industry includes the open price provision, declares Louis Ruthenburg, consultant to the Refrigeration Division of National Electrical Manufacturers' Association.

Certain subdivisions of the electrical industry are operating in accordance with the open price provision clause but the electric refrigeration group is not included in these subdivisions, Mr. Ruthenburg points out.

NRA Division Administrator Arthur D. Whiteside has urged that the "waiting period" in open-price provisions of codes—whereby a member of an industry sets a price and makes it public to his competitors 10 days before it becomes effective, giving competitive firms time to put pressure on him to keep his price level high—be suspended from the majority of codes.

Trailmont Retailers Hear Norge Officials

By George F. Taubeneck

PHILADELPHIA, March 5.—(Special Wire to ELECTRIC REFRIGERATION NEWS)—Trilling & Montague played host to more than 500 dealers here this afternoon, when the 1934 Norge line and campaign ideas were explained by Vice President John Knapp, Eastern Manager Glenn O'Harra, Service Manager Harry Spencer, and Home Economist Betty Appel.

Also present to help out the program were Vice President Walter Seller of the Cramer-Krasselt Co., Norge advertising agency, Dayton Young, manager of the Norge washing machine division, and W. H. Crawford, vice president of the Commercial Credit Co.

George Eyster, star salesman from York, Pa., was married this morning and took his bride, comely Lillian Houser of York, to the Trilling & Montague dealer meeting as a honeymoon. They were feted befittingly.

1,600 Frigidaire Dealers Meet in Chicago

CHICAGO—Sixteen hundred Frigidaire dealers from Wisconsin, Illinois, eastern Iowa, and northern Indiana assembled at the Palmer House here on March 5 to see the 1934 Frigidaire line and hear sales plans outlined by factory executives.

L. F. Skutt, district manager for Frigidaire, presided at the meeting. Product-and-plan presentations were made by a crew led by H. W. Newell, vice president in charge of sales; W. D. McElhinny, commercial sales manager; and Earl Doty, advertising manager.

Michigan Dealers Hear Grunow Executives

DETROIT—Some 200 Michigan Grunow dealers sat in the grand ballroom of the Grosse Pointe Yacht Club here last week, and heard Leonard Turnbull, head of the Specialties Distributing Co., Michigan Grunow distributor, outline his plans for selling 5,000 refrigerators before the end of 1934.

Assisting Mr. Turnbull and his brother Robert were J. J. Davin, sales promotion manager of General Household-Utilities Co.; Dr. J. D. Jordan, research engineer from factory headquarters; and Otto Bowman, Grunow divisional manager in this area. Dudley H. Fay of the *Saturday Evening Post* told the dealers of their manufacturer's plans for 1934 national advertising.

Radio Association to Hold Chicago Show

NEW YORK CITY—The Radio Manufacturers' Association has dropped plans for a public radio show here next Fall but is planning to promote a radio and electrical exposition in Chicago before the year closes, according to an announcement made following a recent meeting of the RMA board of directors.

RMA officials pointed out that the association is not opposing the show planned in Madison Square Garden in September, but is merely withholding any official sanction of it.

The Chicago exposition, however, will be held under the sponsorship and auspices of the RMA.

Electrolux Refrigerator Sales Increase

EVANSVILLE, Ind.—Sales of Electrolux refrigerators were doubled for the first quarter of the present fiscal year over the same period a year ago, according to F. E. Sellman, vice president of Servel, Inc., here.

January and February of this year showed a 500% sales increase for Electrolux over the same two months in 1933.

Largest spring-and-summer newspaper and magazine advertising campaign ever conducted to back gas company efforts throughout the United States in selling Electrolux has been launched by Servel.

Harrison Joins Staff of Westinghouse Lamp Co.

BLOOMFIELD, N. J. — Wesley T. Harrison, formerly secretary of the alumni association of the Stevens Institute, Hoboken, N. J., has joined the engineering staff of the commercial engineering department of the Westinghouse Lamp Co. here. Mr. Harrison will serve as an illuminating engineer to fill a vacancy left by Alfred Paulus who has been transferred to the company's Pittsburgh office as district engineer.

70 Dealers Receive Leonard Franchises

DETROIT — Leonard Refrigerator Co. here appointed 70 new dealers during the latter part of January, according to Godfrey Strelinger, sales manager.

The new dealers are: C. M. Aldrich, Castile, N. Y.; Queens Electric Shops, Inc., 145-19 Jamaica Ave., Jamaica, L. I., N. Y.; Associated Radio Co., Syracuse, N. Y.; Peter M. Doran, Seneca Falls, N. Y.; Hoosick Electric Co., 2322 Fifth Ave., Troy, N. Y.; Gordon P. Smith, Malone, N. Y.; Kingston-Burns & McDonald, Ogdensburg, N. Y.; and Beagg Brothers, Plattsburg, N. Y.

George B. Clark Co., Bridgeport, Conn.; I. Smolen, New Haven, Conn.; Stuart Crafts, Southington, Conn.; Cabot Furniture Co., 238 Exchange St., Chicopee, Mass.

Everett J. Marshall, Bethel, Me.; Moore & Winslow, Jackman Station, Me.; Charles H. Mathews, Kennebunk, Me.; Hanson Hardware Co., Newport, Me.; Arthur E. Daggett, North Anson, Me.; Graves Radio Service, Rumford, Me.; and Bailey's Music Store, Wilton, Me.

Gasser Brothers, Boscobel, Wis.; Goodman Department Store, Goodman, Wis.; Westenbergers, Hartford, Wis.; August Roeseler, Hustisford, Wis.; United Radio Co., 10722 Brady St., Milwaukee; John P. Locher, Newburg, Wis.; Lamger Gerber Auto Co., Sheboygan Falls, Wis.; Standard Mercantile Co., Tomahawk, Wis.; Rhode & Sons, Union Grove, Wis.; Harris & Green, Waukesha, Wis.; Coonley Radio Co., Waupun, Wis.; and Stark & Schill, Wisconsin Rapids, Wis.

J. Jumonville Furniture Co., Crowley, Iowa; Maurin & Wilton, La Place, La.; F. J. Dauterive Furniture Co., New Iberia, La.; Galles Furniture Co., New Orleans; D. H. Holmes Co., Ltd., New Orleans; Daly Motor Co., Opelousas, La.; Ayo's Drug Store, Raceland, La.

Johnson Drug Store, Bay Springs, Miss.; J. C. Clower Furniture Co., Gulfport, Miss.; Woodruff Furniture Stores, Hattiesburg, Miss.; A. Gressett Music House, Jackson, Miss.; Rice-Pappenheimer Furniture Co., Meridian, Miss.; Lott Furniture Co., Philadelphia, Miss.

J. F. Budnik, 3417 Halsted St., Chicago; Viking Electric Shop, 4268 Archer Ave., Chicago; Cohen Furniture Co., Inc., Pekin, Ill.; T. M. Van Deroo, South Holland, Ill.; Lancaster Maytag Co., Lancaster, Pa.; and W. H. Pearce, 52 S. Second St., Philadelphia.

Meterice Asks Creditors To Take 20% on Claims

LOS ANGELES—Meterice of America Co., Ltd., manufacturer of coin meter devices, is asking acceptance by creditors of an agreement by which creditors would receive slightly more than 20 per cent on their claims against the company.

The alternative to the proposed creditors' agreement would be a voluntary petition in bankruptcy, according to Louis P. Pink, attorney for Meterice of America Co., Ltd.

The company lists cash available for distribution at \$23,687.43 and creditors' claims totaling \$115,060.21.

Friends, Employees Honor Reliance President

CHICAGO — More than 100 employees, customers, and friends of Ernest Buelow, president of Reliance Refrigerating Machine Co. of this city, held a surprise birthday party for the executive at the company's offices here.

The party also was in celebration of Mr. Buelow's return to the active direction of the company, ill health having forced him to remain away from business responsibilities during part of the past year.

G-E Kitchen Coach Used In Canadian Territory

WESTPORT, Ontario, Can.—In the course of a four-weeks' trip, in which 85 towns and villages in the territory of the Southern Canada Power Co. were covered, a General Electric kitchen coach was inspected by more than 60,000 people.

More than 10,000 prospects were registered on the trip, in which the coach covered some 9,000 miles. The trip was advertised through the medium of handbills, which were printed in both English and French and circulated a day or so ahead of the coach's visit to small towns.



The hostess' aide-de-camp

When company comes there must be no slips. Especially if it's important company. Everything that can be prearranged has been taken care of and the refrigerator has done its part. A frozen dessert placed in the dessert pan in ample time should be delicious.

But suppose when the hostess draws out the pan, calmly confident, there is nothing but slush. What will she think and say?

If your electric refrigerator is to give satisfaction, it must be dependable always. A single failure at a critical moment and the name of your box is "mud."

To be sure of dependable service *for the life* of the refrigerator, dependable parts and good workmanship must be built into it. Manufacturers have found that Dry-Zero completely answers the insulation question and, further, supplies them with one of their best sales points.

Dry-Zero Corporation, Merchandise Mart, Chicago, Illinois.
Canadian Office: 687 Broadview Avenue, Toronto, Ontario.

What Is Dry-Zero?

A Waterproof Tropical Fibre

In certain tropical areas, notably Java and the South Sea Islands, there is a species of tree called *Ceiba Aeschulifolia* that is very old botanically. It has survived centuries of unfavorable growth conditions because of clever provisions of Mother Nature's to insure propagation far and wide. In the giant pods which grow upon this tree are developed the small seeds to which are attached fine, white fibres. These fibres are so light that they carry the seeds (when the pods break open) on the wings of the wind for great distances. And to withstand the humid condition of the tropics, Nature has waterproofed them, each fibre being a sealed tube unaffected by moisture, so that even in tropical showers they sail on with their precious seeds over wide areas.

Fibres Grained into Dry-Zero

It is these natural qualities that have made the *Ceiba* fibre so remarkable for refrigeration insulation. By a patented process of "graining" done wholly by air, the fibres are all laid uniformly across the line of heat flow, 2,000 to the inch, each providing a block to the passage of heat and adding almost 40% to their natural heat insulating value. A batt is thus formed that is the last word in the advance of scientific insulation.

High Insulating Efficiency

For use in electric refrigerators, the Dry-Zero batt is enclosed in the most advanced type of moisture-proof container made to fit exactly the walls, top and bottom of a refrigerator. In place, they provide permanently efficient insulation far superior to any other commercially available material.

Any refrigerator insulated with Dry-Zero will stand any scientific test and show a remarkable saving in operating costs even in the first two or three years, often amounting to as much as 60%. Dry-Zero assures economical operation for the life of the refrigerator.



THE MOST EFFICIENT
COMMERCIAL INSULANT KNOWN **DRY-ZERO**

Frigidaire Introduces Many New Features in Class Models of 1934 Household Line

(Concluded from Page 1, Column 1)

arm. Other features include centered evaporator with door, interior light, ice trays with rubber grids and taper grids, automatic ice tray releases, nine-point cold control, the new Frigidaire Servashelf, which is removable so that the housewife may use it as a tray, and a utility basket for round objects.

The super series comprises the largest number of models—six. Prices are as follows—4 cu. ft. model—\$185; 6 cu. ft.—\$234; 7 cu. ft.—\$261; 9 cu. ft.—\$290; 12 cu. ft.—\$362; 15 cu. ft.—\$452.

The super series models have greater ice freezing capacity, hydrators for fruit and vegetable storage (two hydrators in the three larger models), nine-point cold control, removable shelves that are adjustable, automatic defrosting, automatic ice tray releases, interior light, the Servashelf, utility basket, glass cold storage tray with ribbed bottom and a centered evaporator. Super series models also have an exterior finish of porcelain.

The two deluxe models have 12 and 15 cu. ft. capacity and are priced at \$420 and \$509, respectively. They contain all features of the super series models, plus an ice chest and a frozen storage compartment, which permit the freezing at one time of 156 ice cubes and 19½ lbs. of ice from which crushed or shaved ice can be made.

There are two large hydrators with chromium-finished fronts which are fitted into the cabinet as drawers. There is an enclosed compartment housing a large utility basket, and in the cabinet is a complete set of dishes on a revolving standard.

Five different kinds of cold are offered in the deluxe models, Frigidaire officials claim. The temperatures provided are freezing temperatures in the

trays, super freezing in trays resting on the super freezing plates, frozen foods storage temperatures in the frozen storage chest, higher temperatures providing moist storage in the hydrators, and normal temperatures in the food compartment.

A water cooler with pull down faucet is standard equipment, as are locks on each of the door latches.

To introduce its '34 products to the public Frigidaire this month is launching one of the most ambitious advertising and sales promotion programs in its history.

The advertising program includes color rotogravure copy in 54 Sunday papers, black and white copy in 500 daily newspapers, use of national magazines, radio, billboards and direct mail.

National magazines which will be used include *Saturday Evening Post*, *Collier's*, *Liberty*, *Good Housekeeping*, *Ladies Home Journal*, *Woman's Home Companion*, *Cosmopolitan*, *American*, *Time*, and *Fortune*.

Advertising will be broken into two classes—merchandising and institutional, according to Earl D. Doty, advertising manager.

Institutional copy will portray Frigidaire's history and will stress some of the features which it has introduced.

Copy also will invite comparison of Frigidaire models with competitive makes.

A feature of the program will be a 4-color rotogravure piece which will be circulated by mail and by house-to-house local distribution in selected areas to the extent of 2,000,000 copies. This piece covers the features of the 1934 line and is designed to supplement local newspaper copy.

Dealers will be reimbursed one-half

the cost of any tie-up spring showing announcement advertisements run in local papers. The same 50-50 cost arrangement holds for radio "teaser" programs.

The current Frigidaire radio series over a network of 53 NBC stations has been extended from Feb. 27 to March 27 pending further consideration of longer series. This program covers the cruise of Phillips H. Lord (Seth Parker) on his four-masted schooner.

Outdoor copy is short and snappy, containing no illustrations of Frigidaire units.

The sales promotion campaign on which the introduction of the 1934 line is based and on which the spring showing to start March 21 rests, will govern activities of selling men until June 22—a 90 day period, according to Lee A. Clark, sales promotion manager.

A prospect selling book to be used by every salesman is a demonstration album designed so that it may be left with the prospect as a silent salesman to work until the salesman returns to close the deal, Mr. Clark declared.

It carries the complete story and illustrations of the 1934 models and follows up the messages used in the Frigidaire advertising.

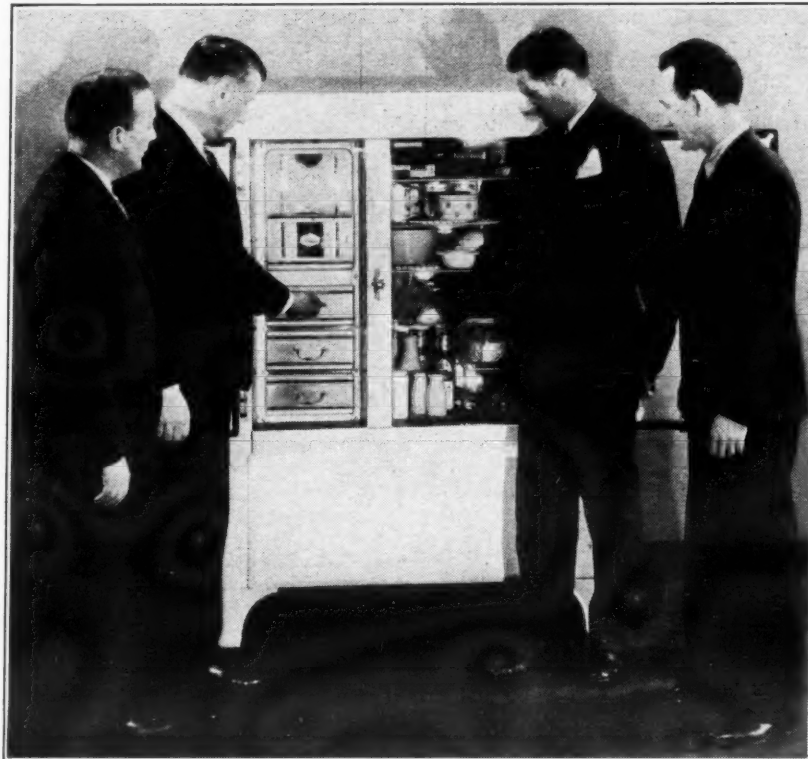
Since spring is the peak selling season for refrigerators, all sales promotional plans center about this period.

The three-month period is broken down into three sections of activity. From March 21 to May 1, the new line will be on display in the nationwide spring showing. From May 1 to June 1, activity will be devoted to a demonstration of special features, and from June 1 to June 22, salesmen will concentrate on developing leads not yet closed.

Every showroom will be decked out in spring colors and panels, posters, banners and other display material in the same spring "theme." Larger showrooms will have floral displays.

To offer an added incentive to pros-

'This Is a Frigidaire '34'



Frigidaire executives Frank R. Pierce, C. A. Copp, H. W. Newell, and E. B. Newill look over a '34 deluxe model. Mr. Copp is about to open a drawer-type hydrator while Mr. Newell releases a serving shelf.

pects to visit showrooms, a "clover leaf design" beverage serving tray, packed in cellophane, will be handed out to showroom visitors. This will be accompanied by a piece of literature "Serving Beverages in '34" pointing out the necessity of proper refrigeration and proper serving of beverages in the home. Recipients of the trays will be requested to fill out a card telling which feature of the new Frigidaire they like best.

During the showroom demonstrations, frozen desserts will be served to visitors, having been made before their eyes by showroom attendants. "Pango" a new, ready-prepared liquid chocolate dessert mix, which freezes in about one hour, will be used.

To facilitate demonstrations dealers will be provided with "features" panels—decorative cardboards that stand beside cabinets of each series, listing the outstanding features of that series. The features are listed in the order in which they come in the approved product demonstration, for the salesman's benefit.

To high-light certain features, a set of "features dolls" has been created. The set consists of 12 colored, small cut-out dolls which can be attached to features which they represent.

To focus attention on the spring showing, dealers will sponsor General Motors' Twenty-Fifth Anniversary celebrations and parades in which dealers for other General Motors products will participate.

N. Y. Dealers Brave Storm To See New Line

NEW YORK CITY—One of the largest turnouts of Frigidaire selling men that ever has met in New York bucked snow drifts Tuesday night and Wednesday morning to witness the presentation of 1934 products, selling plans, and advertising in the Waldorf Astoria by a crew headed by J. J. Nance, manager of Frigidaire's air-conditioning activities.

The convention probably was one of the frigidest Frigidaire conclaves ever put on. H. W. (Hike) Newell, vice president, who was scheduled into New York as the ranking executive, was snowbound and didn't get there. The convention crew's special sleeper and baggage car were hours late coming from Boston, and dealers, salesmen, and utility and department store men reported hours of battling with the snow in order to reach the hotel.

It was estimated by J. T. Collins, eastern general manager for Frigidaire Sales Corp., that 1,800 persons attended the convention—sixteen hundred of them Frigidaire selling men, 200 guests representing General Motors and subsidiaries.

In charge of the event for the three Frigidaire districts represented were Keith Saunders, wholesale manager, New York; George Brady, district manager, New Jersey; Walter B. Cooke, district manager, Albany; and Worth Faulkner, educational director, New York.

Highpoint of the entire convention was the announcement in a telegram from Mr. Newell of the establishment of \$99.50 as the base price for Frigidaire's fifteen 1934 models.

When the telegram was read by Mr. Nance, salesmen threw cards, ribbons and other handy items into the air and cheered lustily in a demonstration that clearly indicated their approval of the new low price.

Other Frigidaire executives participating in the New York meeting were C. T. Lawson, manager, department store division, and Frank Doten, eastern regional representative.

350 Dealers View New Grunows at Los Angeles

LOS ANGELES—More than 350 dealers from southern California and Arizona assembled at the Jonathan Club here Feb. 21 for a banquet and preview of the 1934 Grunow refrigerator line sponsored by Watson & Wilson, Inc., Grunow distributor here.

William E. Darden, Pacific Coast manager for the General Household Utilities Co., addressed the dealers, explaining features of new models and the company's 1934 sales promotion and advertising program.

Arthur C. Elliott, manager of domestic appliance sales for the municipal bureau of power and light of Los Angeles, and Henry C. Rice, head of the merchandising department of the Southern California Edison Co. discussed the part these two organizations will play during 1934 in merchandising electric kitchens.

The Edison company will spend, during 1934, more than \$300,000 in advertising electric ranges, refrigerators and washers said Mr. Rice, and the complete merchandising program for 1934 will require expenditure of more than one million dollars.

The company will finance dealer operations through all of its 70 branch offices in southern California.

Bundy Forms Subsidiary For Hydrogen-Welding

DETROIT—Bundy Tubing Co., manufacturer of hydrogen-welded steel tubing, announces the organization of a subsidiary company known as H. W. Bundy, Inc. The new company was incorporated on Feb. 6 with officers as follows: W. W. Anderson, president; T. M. Rude, vice president; A. C. Winger, secretary and treasurer; and H. J. Blair, superintendent.

The new company will take over the commercial parts copper-hydrogen-electric-welding production of the parent company other than tubing. Production includes both custom hydrogen-welding of parts supplied by other manufacturers ready for welding, and also the company production of finished products.

General offices will be maintained in the plant of the Bundy Tubing Co. at 10951 Fern Ave. Manufacturing will be done at the former Bundy Tubing Co. plant, 4815 Bellevue Ave., where the company's large "Zeppelin" type hydrogen-welding furnace is located.

Miss Marge Niess Heads Alter's Sales Promotion

CHICAGO—Marge Niess has been appointed director of sales promotion activities for Harry Alter, Inc., northern Illinois distributor for Grunow refrigerators.

Miss Niess has been previously connected in sales promotion work with the United States Radio and Television Co., the Chevrolet Dealer's News, and the National Broadcasting Co.

Cordley & Hayes January Sales Show Increases

NEW YORK CITY—January sales of Cordley & Hayes water coolers showed an increase of 126% over January of last year. December, 1933, sales were up 70% over December, 1932, according to W. J. Mafera.

IMPORTANT "BUY WORDS"

"STERLING," "Chemically Pure," "Fadeless Dyes" and countless similar phrases have become "buy words"—unquestioned symbols of known worth and quality. In the finishing of sheet metal products, Parker Processed has likewise come to indicate a standard of greater value.

Two refrigerators may look exactly alike, yet one will retain its newness and beauty twice as long because, under its gleaming finish, a careful manufacturer has included a rust-resisting quality that will prevent untimely corrosion.

PARKER RUST-PROOF COMPANY, DETROIT, MICHIGAN

2197 East Milwaukee Avenue

PARKER

RUST-PROOFING

processes

Under the enamel or lacquer is a Parker Process—Bonderite—life insurance for the fine finish. Because it is a hidden value, buyers recognize it as an intent to deliver a better product—a sincere effort towards securing that greatest asset, good will.

Any manufacturer can include these "buy words" in his sales vocabulary at comparatively moderate cost, securing the advantage of this tremendously effective selling feature: Rust Prevention by Bonderizing.



Parker literature summarizes the findings of the Parker research staff. It describes their more important findings in 17 years of research, supported by extensive practical experience in rust-proofing and finish improvement of iron and steel products in all industries. Copies will be sent on request to interested technical men and manufacturers.

PARKERIZING • BONDERIZING

One Man Connected With 240 Utilities

WASHINGTON, D. C.—A partial report on the Rayburn investigation into the control and ownership of public utilities revealing that 15 individuals are connected with 100 or more companies was submitted Feb. 21 to the House of Representatives Interstate Commerce committee.

The partial report shows that relation of holding companies in power and gas affecting control.

A statement by Rep. Rayburn of Texas, conducting the investigation, declared that interlocking directorates "are common in the utility companies of one system, dealing in power and gas," but added the report does not show such relations between systems. It does show the connection of big utility men with many companies, he said.

E. P. Summerson of the Electric Bond & Share Co., New York, leads all other individuals in number of connections. The report shows he was connected with 240 power and gas companies.

The report also shows that 3,000 companies are in a "chain of control" whereby a controlling company is sometimes 11 companies removed from the actual operating company.

It said "the most outstanding instance in regard to the number of removes of a company from the head company is the Richmond Light & Railroad Co.

"This company is 11 removes from Associated Gas & Electric properties, which is the top company of the Associated Gas & Electric system," Rayburn said.

Utility's Franchise in St. Louis Is Contested

ST. LOUIS—City Counselor Hay of St. Louis in an opinion delivered Feb. 20 declared that the franchise of the Laclede Gas Light Co. expired in 1917 and that the Board of Aldermen should ask the Attorney-General to institute quo warranto proceedings to test the company's right to operate in the City of St. Louis.

The opinion holds also that the city "is expressly empowered both by the Constitution of the State and by its charter to acquire its own gas plant or system by construction or by purchase or condemnation of the properties of the Laclede Gas Light Co. or any other existing facilities, and to maintain and operate the same."

City Counselor Hay has stated that if necessary in order to obtain lower rates the city should acquire and operate its own gas system.

The gas company claims a perpetual franchise based on an act of the Legislature enacted in 1868 granting to it "forever" the rights, privileges, and franchises which had been conveyed by an act passed in 1857.

Hay's opinion reviews the acts of the Legislature and reaches the conclusion that the act of 1868 was unconstitutional.

22% of Michigan Farms Have Power Service

ANN ARBOR, Mich.—More than 22 per cent of Michigan's 169,372 farms now have central station electric service, according to a report just issued by the Utilities Information Bureau.

During 1933, service was taken to more than 2,500 additional farms. The larger companies of the state reported net gains aggregating 2,564, and new farm customers taken on by small companies or local plants may swell the year's increase.

The 2,564 farms given service in 1933, added to the 36,079 Michigan electrified farms reported in the United States Census of Electrical Industries for 1932, make the state's grand total more than 38,633.

Marsh Appoints 3 New Sales Representatives

CHICAGO—Jas. P. Marsh Corp., manufacturer of temperature controls, valves, gauges, and thermometers, has recently appointed three new territorial sales representatives.

The new representatives include A. W. Reynolds, 157 Baldwin Ave., Syracuse, N. Y.; J. M. Kane, P. O. Box 1552, Ft. Worth, Tex.; A. A. Maycock Co., P. O. Box 3, Salt Lake City.

Dealers Buck Blizzard To Attend Meeting

BURLINGTON, Vt.—Neither the deep snow nor the temperature of 32 degrees below zero kept the Vermont Hardware Co., Leonard distributor here, from holding a dealer convention at its White River Junction branch recently. Leonard factory officials present for the meeting found an almost 100 per cent attendance by the company's retailers, according to R. R. Ludington, Leonard assistant sales manager.

Fischman Co. Re-enters Soda Fountain, Bar Fixture Field

PHILADELPHIA — The Fischman Co. of this city is announcing its re-entry into the field of soda fountain, beverage dispensing, and kitchen equipment manufacturing.

The new firm will occupy the plant of the former I. Fischman & Sons at 10th St. and Allegheny Ave. here.

The company will sell its products through wholesalers, according to Arthur M. Fischman, director of sales for the company.

Installation in the factory of complete stamping facilities will permit design that eliminates soldering, sharp corners, etc. Stainless steel and chromium plate will be used as the finish for the products.

Westinghouse Dealers Receive Sales Tools

MANSFIELD, Ohio — Westinghouse Electric & Mfg. Co. officially opened its pre-spring refrigeration selling campaign last week when it sent to its retailers sales tools and instructions for starting 1934 sales activities.

Most interesting sales implement supplied retailers for the campaign is a "telephone canvass guide," which contains full instructions for use of the telephone in locating prospects and securing appointments.

The factory assures its retail organization that telephone solicitation is particularly effective at this season of the year, when housewives have begun to think about refrigeration, but haven't yet started shopping for it.

Westinghouse dealers have been given newspaper advertising guidebooks which contain ideas and layouts for advertisements during the early spring season. And for dealer windows, the factory is supplying blowups of an advertisement which is to appear in the March 10 issue of *Saturday Evening Post* and the April issue of *Good Housekeeping*.

For direct-mail and handout purposes, Westinghouse has issued a small piece titled "You'll be Happier with it," containing pictures of the company's entire refrigerator line, with numerical listings of each model's convenience features. Also available for dealers and distributors is a new 24-sheet poster—"I'd buy a Westinghouse if I were you," says a woman into the telephone.

There is also a new window display piece stressing Westinghouse owner satisfaction, and an envelope enclosure using the same theme.

A sales training kit has also been prepared at the factory for dealers. It contains sales manuals, detailed descriptions of the Westinghouse manufacturing process and policy, and six films for training retail salesmen.

Another service being offered retailers by the factory contains films for sales training, and for presenting the Westinghouse line to prospective buyers.

Revere Copper & Brass Promotes Executives

NEW YORK CITY—J. A. Doucett, formerly vice president and general sales manager of Revere Copper & Brass, Inc. here, has been appointed vice president in charge of sales, and C. A. Macfie, formerly assistant sales manager, becomes general sales manager, according to C. Donald Dallas, president.

Before joining Revere, Mr. Doucett was associated with the American Brass Co. in its branches at Buffalo and Kenosha, and was later vice president of the Michigan Copper & Brass Co. in Detroit, now the Michigan division of Revere.

Mr. Macfie was at one time manager of the copper sales department of the U. T. Hungerford Brass & Copper Co., then became New York sales agent for sheet copper products of the Rome Brass & Copper Co., now the Rome division of Revere. He joined Revere in 1929.

Service Firm Organized In New York City

NEW YORK CITY—Just organized here is the Boro Refrigeration Service Co. at 811 First Ave. Heading the company is Nathan N. Simon, formerly associated with Kelvinator Sales Corp. in New York City.

Kalman Resigns from Insulite Co.

CHICAGO—W. E. Kalman, for the past three years manager of the industrial sales department of the Insulite Co. here, has resigned from that position, effective March 15. He has announced no plans for the future.

Display Cases by Seeger

SAINT PAUL



The Seeger Refrigerator Company presents a complete line of Modern Display Cases, equipped with diffusion shelf evaporator coils. The line consists of Single and Double Duty Display Cases—also Full Vision Display Cases. Styles in various lengths. All Display Cases by Seeger are sold through Dealers and Distributors of Electric Refrigeration.

The diffusion shelf evaporator coils produce uniform, low temperature, are self defrosting with correct humidity, preventing losses from shrinkage and trimming. They have been selected as best suited for the purpose by experienced Grocers, Meat Dealers and Delicatessen Dealers and are connected ready for thermostatic expansion valve and compressor attachment, which are furnished by Electric Refrigeration Distributor.

Seeger Display Cases have every modern improvement and convenience for the sale and preservation of food—many of these improvements are exclusive and patented by Seeger. The Case Exterior is of white porcelain with pleasing green design, and black porcelain base. The interior is also of white porcelain—all porcelain used being "Seeger Made." The entire Case is adequately insulated. The Display section has three thicknesses of 1/4 inch plate glass, rubber sealed and Seeger processed to prevent fogging (patent pending), a proven development exclusive with "Seeger Made" Cases.

For detailed information on Seeger Display Cases, or any type of Commercial Cabinets, write

SEEGER REFRIGERATOR COMPANY
SAINT PAUL, MINNESOTA

New York — Los Angeles — Chicago — Boston — Buffalo
Philadelphia — San Francisco

OIL BURNERS

Air-Conditioning Equipment Shown At Oil Burner Convention

(Continued from Page 1, Column 3)

most of the exhibitors are showing complete boiler-burner units, many of them designed to do a partial air-conditioning job. The air-conditioning unit which heats, humidifies, cleans, and circulates the air is to be found in great abundance at the show. Of especial interest are the many cut-away and glass-enclosed units—some of the latter being in actual operation.

General Electric has the most complete exhibit of air-conditioning equipment in the show, with devices for complete summer, winter, and all-year air conditioning for homes, offices, and stores, available either for a single room or a complete house.

Kelvinator Air Conditioner

Kelvinator's exhibit features a conversion-type variable-flame burner and an air-conditioning unit.

Westinghouse Electric Supply Co., sole national distributor of the Marr oil burner (made by Franklin O'Neil Heating Co. of Columbus, Ohio) is showing the new Marr which is neither rotary nor gun-type, but which gasifies the oil in the bottom of a heated retort, and then mixes the resulting vapor with oxygen blown through holes in the shaft.

Automatic Burner Corp.'s exhibit is staffed by Trilling & Montague, local ABC distributor. Gar Wood is making capital of its Tempered-Aire direct-

fired air-conditioning unit. Micro Corp. has radically redesigned its domestic oil burners (stepping up volume by reducing pressures through use of a right-angle turn in the air flow, and employing a new diffuser arrangement within a cone for more thorough mixture), and renaming them "Economatic."

New Toridheet Burner

Cleveland Steel Products unveiled today a brand new Toridheet pressure-type conversion burner.

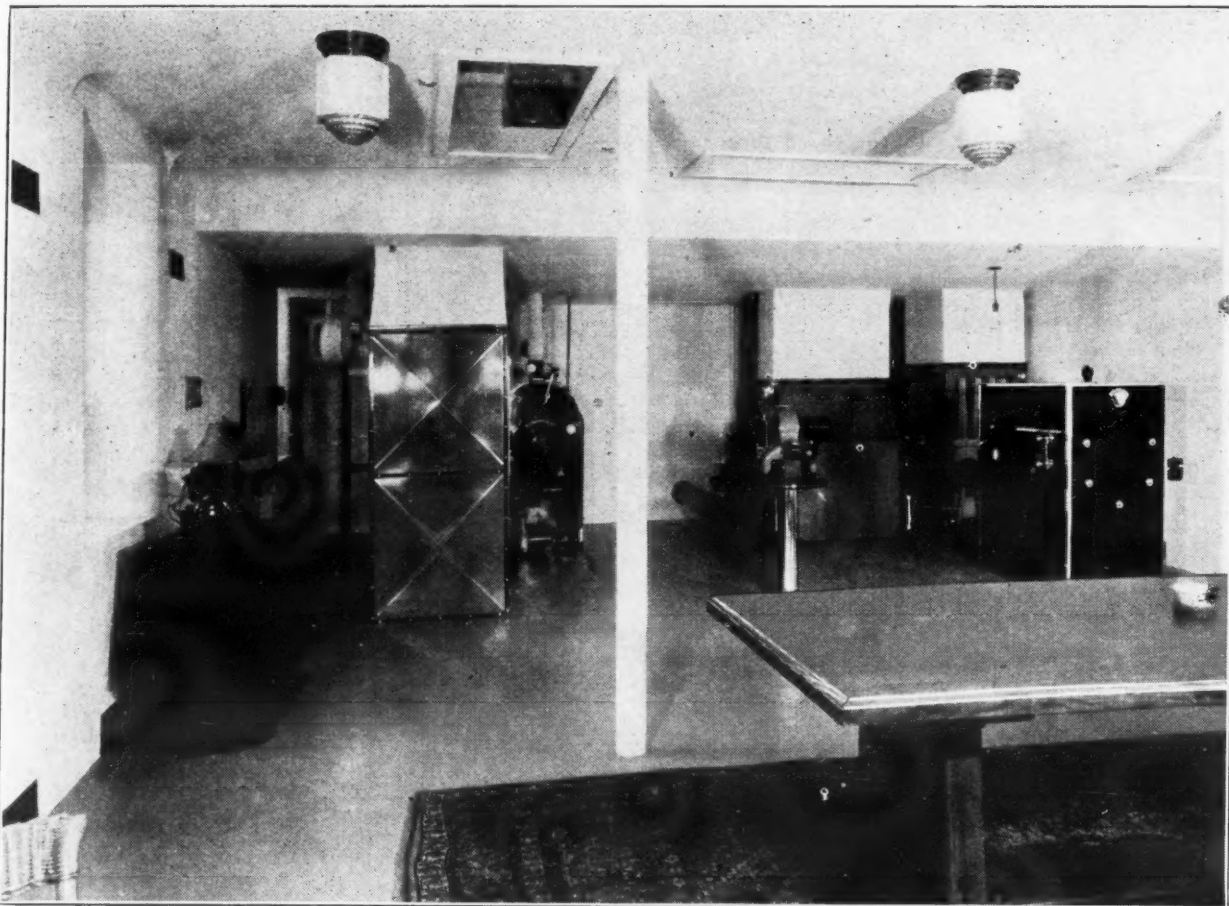
Among the exhibitors of parts for oil-heating equipment were American Radiator, Century Electric Co., Detroit Lubricator Co., Jefferson Electric, Mercoid Corp., Minneapolis-Honeywell Regulator Co., Penn Electric Switch Co., Wagner Electric Corp., and Webster Electric Co.

Most manufacturers in the oil burner industry are represented here almost in toto—everybody from president and sales manager down to local salesmen.

By dint of feverish activity yesterday morning and afternoon, every exhibit was ready and shining by Monday night. The bulk of the trade is expected to come in Wednesday for the dealer meeting.

"Dealer Day" has been set for Wednesday, with the morning given over to an "Oil Burner Code Merchandising Session" which will terminate with an open forum to be conducted by Assistant Deputy Administrator W. Schwan, representing the NRA.

Customers Can 'Feel' the Demonstration in This Showroom



The Detroit distributor for Gar Wood heating equipment is air conditioning his showroom with two systems for demonstration purposes. In one system air is distributed by ceiling ducts, in the other by sidewall registers.

Cabinet Engineers Find Strength of Celotex permits Lighter Framing Members

No heat-leaking cracks or joints when this light but sturdy insulating board is used

Celotex Cane Board, used widely for the insulation of refrigerators and coolers, is surprisingly light in weight.

Yet its inherent strength is so great that cabinet engineers find they can cut down the size of the steel or wood framing members. Celotex adds materially to structural strength and the result is more substantial cabinets.

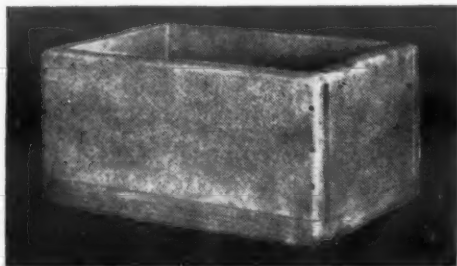
Maximum insulating efficiency is assured, for Celotex is manu-

factured expressly to meet the severest requirements.

Celotex is a thoroughly practical material. A single board cut just the right length, width and thickness covers each insulated area. There are no heat-leaking cracks or joints. It is practical also for machining—for the cutting of holes, for beveling or for notching.

Cabinets insulated with Celotex are absolutely sanitary. The long tough fibres are sterilized, water-proofed, odorless.

Celotex engineers, who know this field thoroughly from practical experience, are always at your service. Consult them freely and without obligation, whatever your requirements.



A typical example of a Celotex cooler insulation, showing the pieces of Celotex assembled in box-like form.

THE CELOTEX COMPANY
919 No. Michigan Ave.
Chicago, Ill.

CELOTEX
BRAND
INSULATING CANE BOARD
Reg. U. S. Pat. Off.

Exclusive with Celotex—Celotex is made under the exclusive Ferox Process (patented) which protects it from fungus growth, dry rot and termites.

Oil Burner Distributor Air Conditions Store

DETROIT—Radio Distributing Co., distributor for Gar Wood heating and air-conditioning equipment, is air conditioning its downtown showroom here with equipment that's mounted right on the showroom floor.

Radio Distributing company also handles Norge refrigerators and a line of radios. D. W. Burke, president, and G. N. Tobias, manager, know the value of visual demonstration—of being able to tune in on the radio or swing the refrigerator door open to look inside. Thus they reasoned that a good way to sell air-conditioning equipment would be to show the prospect what it could do.

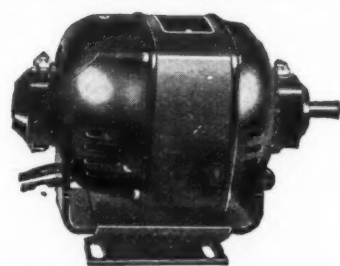
In one corner of the showroom is a Gar Wood oil burner hooked up with an air-conditioning cabinet (not room type) that circulates filtered, tempered, humidified air, in winter weather, through a system of ducts built into the ceiling, with interior construction of the conditioning apparatus visible through plate glass windows. The ducts lead to vents on the upper walls of the room. Registers lower down on the walls return the air from the room to the system.

In another corner is a Gar Wood Tempered-Aire system—a warm air oil-burner heating cabinet hooked up

with an air-conditioning cabinet. This system is also connected with the duct system. Either the warm air or the boiler system (steam or hot water) may be operated to condition the room at the will of the attendant, by merely throwing an air valve in the duct system.

Provisions have been made for both winter and summer air conditioning. For summer cooling, city water is circulated through the conditioning cabinet until the water, later in the season, grows too warm. The system can then be hooked up to a condensing unit for extreme hot spells.

Temperature and humidity recording instruments placed on the walls demonstrate to prospects the results obtained by this equipment.



The Resilient Flange Mounting of the Leland

is of particular interest to the refrigerator manufacturer. Because of it, Leland motors have met with favorable reception in this highly specialized field.

Leland designs so mounted operate without transmission of noise and vibration—important in compressor drives.

This special mounting also protects against shaft misalignment with respect to the base—another important point.

No radio interference—also due largely to the Leland resilient type of mounting.

Obtain a resiliently mounted Leland motor for comparison and test. You will be surprised.

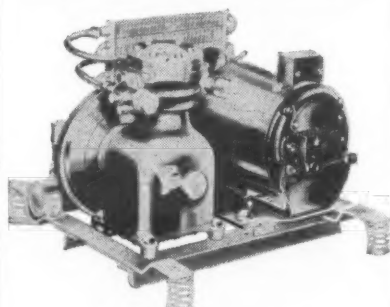
Leland Motors
A PRECISION BUILT LINE
IN RATINGS UP TO 3 H.P.

The Leland Electric Company
Dayton, Ohio

Canadian Address
Toronto

Cable Address
"Leland"

Kellogg Units



Model 43—122 lbs. I.M.E.

For CH₃Cl and SO₂
Sold Complete or Compressors Only
For Domestic Household Lines
For Electric Water Coolers
Very Quiet and Efficient

Kellogg Units are standard equipment:
Oldest Refrigerator Co. in U. S.
Largest Electric Water Cooler Co. in U. S.
"There is a Reason"

Prompt Delivery
Reasonably Priced

Kellogg Manufacturing Company
Refrigeration Sales Division
239 Broadway
New York City
Factory: Rochester, N. Y.

Automatic Burner Corp.—Domestic and range rotary natural-draft oil burners and automatic water heaters. Present: President J. H. Hirsch, Vice President Joseph Hirsch, William Dormann, Distributor Dave Trilling, and staff.

Quiet May Oil Burner Corp.—Domestic oil burners in colors, boiler burner unit, revolving globe in brilliant setting. Present: President Albert Fleischmann, Advertising Manager Lyle Gunits, Charles Collins, Joe Miller, Walter Deal, William Webster, Louis Buehn, Jr. (of Philadelphia distributorship), and staff.

Kelvinator Sales Corp.—High-pressure gun-type oil burners, variable-flame burners, air-conditioning unit. Present: Vice President H. W. Bur-

(Concluded on Page 17, Column 1)

Exhibitors Display New Oil Burners

(Concluded from Page 16, Column 5)

ritt, Sales Manager Charles Van Maanen, Chief Engineer L. G. Estep, R. H. Gemmill, J. M. Knox, Distributor Raymond Rosen, and staff.

General Electric Co. (S. S. Fretz, Jr., Philadelphia distributor)—Oil furnaces, room coolers, controlled boiler burner and water heater in single unit, glass-paneled air conditioner (heats, humidifies, cleans, circulates) for use with G-E oil furnace, 3-hp. water-cooled compressor using Freon. Present: Vice President T. K. Quinn; Joe Donovan, manager, Walter Bowe, advertising manager, and Earl Opal, merchandise manager of the air-conditioning department; W. J. Heggie, general manager of S. S. Fretz, Jr., Inc.

Wayne Oil Burner Corp.—High-pressure gun-type domestic oil burners, boiler burner unit, kerosene-burning hot water heater, warm air unit for air conditioning (heats, humidifies, cleans, and circulates) 12-room house. Present: Vice President John Berghoff, Chief Engineer Ed. Berghoff, Sales Manager C. G. Cleaver, and A. C. Benningson of New York.

Cleveland Steel Products Corp.—Domestic rotary oil burners, pressure-type conversion burner, boiler burner unit. Present: General Manager J. L. O'Brien, Sales Manager R. S. Beale, Advertising Manager George Rakovan, Service Manager Walter Drew, J. F. Lappin of Philadelphia.

Gar Wood Industries, Inc. (air-conditioning division)—Domestic oil burners, two conversion burners, two boiler burner units, Tempered-Aire Direct-Fired air-conditioning unit, indirect (through steam system) air-conditioning units. Present: General Sales Manager C. J. McCafferey, Chief Engineer E. L. Wood, Experimental Engineer Donald Luty, V. C. Page, and Frank H. Dewey.

Timken Silent Automatic Corp.—Complete line of domestic wall-flame

burners, boiler burner unit. Present: President Willard Rockwell, Treasurer W. C. Wood, Vice President R. J. Goldie, Vice President M. A. Powers, Sales Manager M. J. Roberts, Advertising and Sales Promotion Manager T. A. Crawford, Service Manager F. O. Cole, Ralph Hooke, W. C. Brown, W. F. Bolster, N. B. Ellis, T. V. McCarthy, C. P. Ecker, F. E. Purcell, Joe Lavelle.

Westinghouse Electric Supply Co.—Marr domestic oil burners. Present: K. S. Purdy, George F. Gibbons, S. P. Frick, J. M. Burns.

York Oil Burner Co.—High-pressure gun-type domestic oil burners, boiler burner unit, horizontal rotary burners for commercial use, York-Lalor specialized oil burners, air conditioner. Present: President Robert C. Hoffman, Vice President E. I. Craver, Sales Manager Lawrence Knapp, Chet Henry.

Gilbert & Barker Mfg. Co. (subsidiary of Standard Oil Co. of N. J.)—High-pressure gun-type domestic oil burners, boiler burner unit, power burners, conditioned warm-air heating unit (heats, humidifies, cleans, and circulates). Present: (all from oil burner division) Sales Manager W. F. Scully, Advertising Manager E. J. Enoch, Jr., Retail Sales Manager E. R. Walch, Range Burner Manager C. B. Cooley, W. W. Townsend, J. C. Hatch, J. C. Cooper, R. O. Graffius, and staff.

Petro-Nokol Equipment

Petroleum Heat & Power Co.—Petro-Nokol domestic oil burners, and Arco Petrol oil furnaces. Present: General Manager J. H. O'Brien, Vice President C. E. Shields, Sales Manager H. W. Dexter, Chief Engineer B. G. Bulger, Service Manager J. C. Hess.

Micro Corp.—Bettendorf Economat domestic and power high-pressure gun-type burners. Present: Secretary W. E. Bettendorf, Sales Manager W. H. Martin, and staff.

Nuway Corp.—High-pressure gun-type domestic burners, automatic water heater hooked up to hi-jet space heater. Present: Chief Engineer W.

F. Klockau, Sales Promotion Manager C. N. Lockwood, W. W. Chamberlain, J. H. McComb.

Silent Glow Oil Burner Corp.—High-pressure atomizing rotary domestic burners, range and power burners, special burners, boiler burner unit. Present: President R. M. Sherman, Secretary-Treasurer Henry Riordan, Fred W. Stierhoff, W. A. Kemp, J. E. Glaser, Gordon Kinsman, A. C. Schroeder.

Bethlehem Foundry & Machine Corp.—High-pressure gun-type domestic burners, boiler burner unit. Present: Burner Division Sales Manager Paul Anderson, Advertising Manager Willard Myers, Service Manager James Toner, David Lodge, Harry Woods.

Century Oil Burners

Century Engineering Corp.—Stylish gun-type domestic burners (one model with silencer), boiler burner unit, humidifier. Present: Secretary-Treasurer J. A. Lattner, E. E. Scott.

The Enterprise Oil Burner Co.'s display features a 600 hp. rotary burner and new full automatic electric-gas ignition burner for operation with No. 6 oil.

In attendance are W. W. White, A. C. Lieblang, and H. Barley.

H. A. Thrush & Co. display is featuring Thrush flow control system of hot water heating.

The following representatives of the company are in attendance at the exhibit booth: E. D. Noland and J. J. Munro.

In addition the following company executives and representatives are planning to be in Philadelphia to attend the convention sessions: Thos. O. Lanhpier, and Lewis H. Dietz.

The display of the Fluid Heat Division of Anchor Post Fence Co. features Fluid Heat conversion burners and Ideal Fluid Heat burner boiler units. The following representatives of the company will be in attendance or are expected before the end of the week: F. P. Harbin, T. H. Smoot, K. L. Schumann, and W. F. Brannan.

Display of Electrol, Inc., manufacturer of oil burners and air-condition-

ing equipment, covers the entire Electrol line including the Electrol conversion burner, the Electrol-American and Electrol Kewanee heating units (complete oil furnaces for domestic use) and will feature the Electrol-American air conditioner.

The Electrol-American air conditioner is the latest addition to the Electrol line, and is designed to provide complete air conditioning for the home, including heating and humidification for winter, cooling and dehumidification for summer, as well as air circulation and cleansing the year 'round. It may be operated in conjunction with any automatically fired heating plant, and offers the advantage of being able to supply hot water the year 'round for domestic purposes.

The following company executives are now attending the convention or plan to be here before the end of the week: Wm. S. Salway, M. E. Simpson, and E. S. Jeffries.

Temperature Charts Shown

Giant temperature recorder charts are a part of the display which the Minneapolis Honeywell Regulator Co. is presenting.

In addition, its display includes their complete line of oil burner equipment and the latest developments in controls for air conditioning, space heating, and industrial processes.

Present: C. B. Sweatt, vice president in charge of sales; George Kingsland, vice president in charge of space heating; A. H. Lockrae, assistant sales manager of original equipment division; Chief Engineer Fred Denison; H. E. Chapler, William Brown, Chris Jensen, Arnold Michelson, Lou Bedford, Leroy Plum, George Guler, J. C. Dorsey.

Wagner Electric Co.—Small motors, stroboscopic explorer (to enable visitors to see a quick break switch in detail, a moving rotor stand still, and moving rotor turn as they moved their heads). Present: Chief Engineer Paul Baker, B. Woodman, James Clark, Thomas Marino.

Webster Electric Co.—Ignition trans-

formers, small power transformers, fuel unit. Present: Vice President A. C. Kleckner, Sales Manager E. M. Ford, Chief Engineer (industrial division) V. D. Ott, H. E. Fellows, B. T. Wiechers.

Jefferson Electric Co.'s display features oil burner ignition transformers. C. T. Hartnett is in attendance at the exhibit booth.

Penn Electric Switch Co.—Controls, furnace blower and humidifier, air compressor for oil-burning systems and air-conditioning equipment, dramatized chart showing results of new Penn control system for homes. Present: President Albert Penn, Vice President M. E. Henning, Chief Engineer L. M. Parsons, Sales Manager N. B. Delavan, R. V. Clark, R. H. Luscombe.

Century Motors

Century Electric Co. is exhibiting motors for oil burners of various types and mounting specifications: standard horizontal, cushion mounting, flange mounting, capacitor, D.C. motor with A.C. for ignition; also, explosion proof motors used in handling combustible liquids such as oil for use in explosive atmospheres.

Present: William Treu, sales engineer; T. Elder, small motors division engineer; G. H. Peachin, district manager; W. L. Dively.

American Radiator Co. (also Detroit Lubricator and Excelsior Products)—Joints, valves, fittings, indirect water heaters, boilers (display of boiler units made for Silent Glow, Timken Silent Automatic, Electric, Anchor Post Fence, Toridheat, Arco Petro). Present: Mr. Russell, E. H. Ruppert, H. H. Chaplin. More executives are expected tomorrow.

Mercoid Corp.—Controls for oil heating, refrigeration, and air conditioning. Present: Vice President J. W. Owens, Chief Engineer I. E. McCabe, W. K. Stauffer, A. N. Schultz, W. L. Coulterjohn.

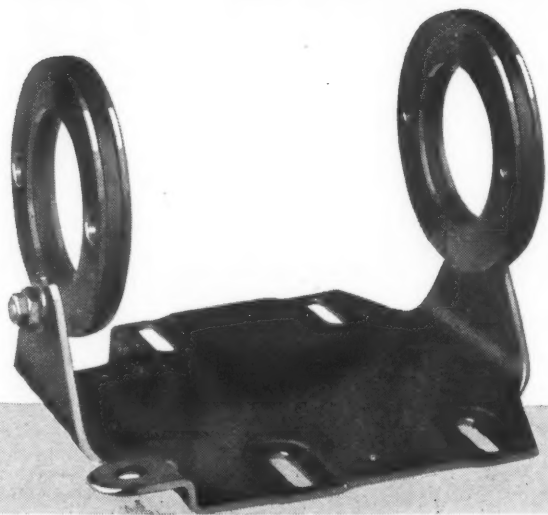
Motor Wheel Corp.—Water heaters, ovens, boilers, air-conditioning units (heat, humidify, clean, circulate). Present: M. F. Coates, general manager, heater division; N. M. Edwards, Adolph Frantz.

ONLY

DELCO MOTORS

have this

VULCANIZED RUBBER CRADLE MOUNTING



Most motors are quiet when they leave the factory . . . but how about the *second* and *third* year of operation? The normal quietness of Delco motors, due to proper balance and precision manufacture, is well known; and now, with the special vulcanized rubber cradle mounting, this quietness becomes even more appreciated. The rubber is vulcanized both to the motor ring and to the supports, allowing full rotative flexibility, yet curbing

any tendency of the shaft to twist out of line. So successfully does this new Delco mounting isolate vibration and hum from the base that the quietness of Delco motors is rapidly becoming a by-word in the electrical manufacturing industry. It is a simple matter to engineer a Delco motor into a good product . . . and the result is highly gratifying to manufacturer, dealer and ultimate owner. Delco engineers are always at your service.



DELCO PRODUCTS CORPORATION, DAYTON, OHIO

4 Vertical Rotary Burners in ABC Line

CHICAGO—Four vertical rotary type oil burners for house heating and a fully-automatic water heater are included in the 1934 line of ABC oil-burning equipment manufactured by the Automatic Burner Corp.

A complete line of oil burning ranges is also manufactured by Automatic Burner Corp.

Three of the oil burners comprise the "E" series of models introduced by ABC this year. All are equipped with Minneapolis-Honeywell controls and will burn either No. 1, 2, or 3 oil.

Capacities of models E-3, E-4, and E-5, in terms of sq. ft. of steam radiation, are 1,250, 3,000, and 6,000.

The ABC type "H" vertical rotary oil burner has a capacity of 600 sq. ft. of steam radiation. It burns No. 1, 2, or 3 oil.

Principal feature of the model FA-9

water heater is a direct action mechanical water temperature thermostat operating a specially designed oil valve, perfected by ABC engineers. The action is entirely mechanical (no electricity is required) operating on a temperature differential of less than 10° F.

The burner itself is a standard 9-in. ABC stove burner. It is ignited by a gas pilot. The standard water storage tank has a 40-gal. capacity. The 9-in. burner has a maximum of 30 gal. of water an hour, consuming from 1 to 2 pints of oil per hour of operation.

Allen-Ingraham Sells Kelvinator Oil Burners

NEW YORK CITY—Allen-Ingraham, Inc., metropolitan distributor of electrical appliances, will sell Kelvinator oil burners in the New York City area, it has been announced by General Manager Willard Hall of the Allen-Ingraham organization.

Allen-Ingraham, Inc., operates 10 major and 14 minor retail stores in the metropolitan area and employs more than 200 retail salesmen.

Roberts New Sales Head Of Timken Co.

DETROIT—Millard J. Roberts has been elected vice president and general sales manager of the Timken Silent Automatic Co., manufacturer of Timken Silent Automatic oil burners, succeeding E. V. Walsh, resigned.

Mr. Roberts was at one time president of the Roberts-Gordon Appliance Co. and for the past year has been connected with American Radiator Co.

Liquid Carbonic Sets Up Solid CO₂ Laboratory

CHICAGO—Liquid Carbonic Corp. here has established a research laboratory for gathering and supplying data on solid carbon dioxide.

Toridheet Shipments Show Big Gain For January

CLEVELAND—Shipments of Toridheet oil burners, manufactured by Cleveland Steel Products Corp., increased 200 per cent over shipments for the first two months in 1933, officials of the company have reported.

The states of Pennsylvania, Maryland, Rhode Island, and Massachusetts lead other commonwealths in the number of Toridheet oil burners installed in this period.

More than 100 Toridheet oil burner dealers and salesmen are expected to attend the annual convention of the American Oil Burner Association in Philadelphia this week, at which the new Toridheet oil burner will be presented for the first time.

New Variable-Voltage Adjuster is Introduced

CLEVELAND—Acme Electric & Mfg. Co. of this city is introducing a new variable-voltage adjuster which permits regulation and adjustment of primary line voltage from either below or above normal to the proper operating voltage of the appliance with which it is being used.

The device is similar in construction and appearance to an ordinary step-down transformer, there being a series of taps within the case. A manually operated dial provides the necessary regulation medium for control, while an instrument indicates the secondary voltage in connection with the regulation from the operating dial.

Standard Electric Stove Releases New Catalog

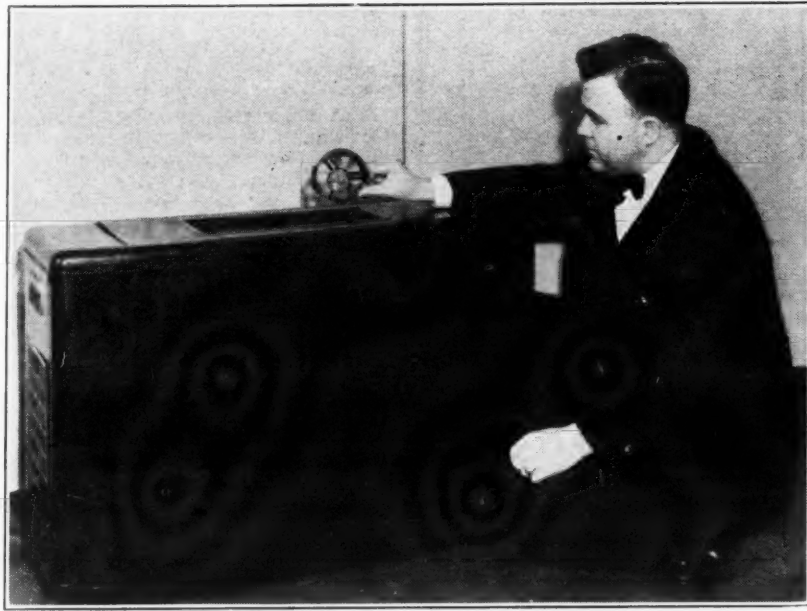
TOLEDO—Standard Electric Stove Co. has recently released its new catalog showing its entire line of domestic ranges, commercial ranges, water heaters, air heaters, ovens, griddles, hot-plates and utensils.

New distributors for Standard Electric ranges include H. C. Baker Co., Inc., Roanoke, Va.; Rackliffe Bros. Co., Inc., New Britain, Conn.; Scranton Distributors, Inc., Scranton, Pa.; and the Williamsport Auto Supply Co., Williamsport, Pa.

Harris Sells Toridheet Line in Forest Hills

FOREST HILLS, N. Y.—Jay Harris, formerly director of the installation and service school of Silent Automatic Corp., has been appointed distributor for Toridheet oil burners in Queens county, with headquarters at 117 Queens Blvd. here. Name of the distributorship is the Toridheet Engineering Corp. The company will also sell and install air-conditioning systems.

Measuring Air Velocities



A Westinghouse engineer shows how to use the anemometer to measure the velocity of air being discharged from a Westinghouse room cooler.

Explains Use of Kerotest G-W Control In Multiple Refrigeration Systems

By G. R. Postlewait, Kerotest Mfg. Co.

OBTAINING ideal operation and high efficiency is a complex problem to the refrigeration engineer, particularly with the advent of multiple commercial installations. Present requirements are much more rigid and the operating standards so much higher than previously, presenting more difficult tasks to installation and service engineers.

It is not uncommon in the commercial field to find installations where as many as five different temperatures are being obtained from a single condensing unit. Even though these installations may be properly engineered from the standpoint of applying the correct size evaporators, the proper operating pressures, peak load conditions, varying weather conditions, etc., there are other factors which may make the problem more than theoretical. These have to be ironed out by the installation and service engineers to meet the conditions encountered and still maintain the highest efficiency possible.

Beer Cooler Application

A typical multiple temperature installation which often causes much difficulty in maintaining proper temperatures in the various coils, is the one in which a beer cooler is combined with several other coils for chilling meat, restaurant refrigerators, etc.

With the beer cooler operating at relatively high temperatures and back pressures, it is necessary to install two-temperature valves in the suction lines of the various evaporators to maintain the required temperatures.

Even under these conditions it often happens that the relatively warm gas from the beer cooling coil flows back in the suction line to a colder evaporator whose two-temperature valve may be open. Due to the lower pressure and temperature of this cold coil, the gas from the beer coil is condensed.

Cause of Frosted Lines

This tends to warm up the colder coil as well as condensing excess liquid which will be drawn off into the suction lines when the compressor starts, resulting in frosted lines, dripping tubes, and decreased efficiency due to the fact that refrigeration takes place where it is not desired.

A similar occurrence may take place in some of these multiple installations in apartment houses where a number of coils are operating at the same back pressure on a single unit. Suppose one tenant overloads his evaporator by placing a large amount of warm food in his box, or by carelessly leaving the door stand open, or due to sickness requires more ice cubes than ordinarily.

Condensation in Cold Units

The warm gas will leave that evaporator and travel to one of the colder evaporators and be condensed to raw liquid. As the expansion valve in the first coil tends to open wider due to the heat, a great deal of refrigerant may be "boiled off" in this unit and condensed in other cold units before the compressor cuts in.

When the compressor does reduce the pressure, frosted return lines will result in those evaporators in which the raw liquid refrigerant has condensed. These frosted lines frequently lead the service man to suspect a leaky float valve on that particular coil which has the frosted line, even though the valve is actually perfect. The result is poor regulation, excessive service, high current consumption, and possible damage to walls and ceilings.

A simple and effective means of preventing this flow of gas from one coil to another has been developed, by a very sensitive suction line back pressure check valve. This is known as the Kerotest G-W Control Valve.

The valve is made in three standard tubing sizes for ½ in., ¾ in., and 1 in. OD tubing. Both connections on the valves are made with male S.A.E. flare joints to allow for installation.

Placed in Suction Line

This G-W control is placed in the suction line of each evaporator as close as possible to the outlet of the coil. This valve is designed to give unrestricted flow and the bronze coil spring is so delicate that it will not cause any pressure drop, and being of the straight through type it will not trap the oil. An arrow indicating the direction of flow will be found on the body of the valve. This arrow should point from the evaporator to the compressor.

This control is not a two-temperature valve in any sense of the word. The delicate bronze spring needs no adjustment and is only sufficiently strong as to hold the valve seat in position and as the pressure builds up the seat is more firmly closed.

The valve can be used in any system employing common refrigerants, with the exception of ammonia, acting as a positive check valve. It may be adapted to present systems to overcome conditions such as those described above. It is also effective where there is a leak from the high side to the low side through the compressor in preventing the leaking gas from building up a pressure in the coils.

World-Wide Reception Claimed for Sparton Set

JACKSON, Mich. — World-wide reception is possible with the three new Sparton radio models which have recently been introduced by the Sparks-Withington Co.

Console model 475 has a regular broadcast band and short wave down to 24,900 kilocycles or 12 meters.

Model 75 is an all-wave compact table receiver with the same chassis and dial equipment as the model 475.

Third of the new series is model 478, a console with the regular broadcast band and short wave down to 3,400 meters.

Bakery Engineer Addresses Chicago A.S.R.E.

CHICAGO—W. W. Reece, chief engineer of the W. E. Long Co., bakery engineer, addressed the Chicago section, American Society of Refrigerating Engineers, Monday night, Feb. 12, on air conditioning in bakeries. The affair was a joint meeting with the A. S. R. E., the American Society of Heating and Ventilating Engineers, and the Illinois chapter of the American Society of Heating & Ventilating Engineers.

Kelvinator Has Two Types of Oil Burners

DETROIT—Kelvinator Corp. here is in production on two types of oil burners, one of the horizontal rotary type and the other of the conventional intermittent variety, the latter embodying the gun or pressure design.

In the near future, the company plans to introduce a line of combination units, constituting a complete heating unit with the burner built in for steam, hot water, and warm air heating installation, according to C. Van Maanen, manager of the oil burner department.

Continuous Heat Generation

Kelvinator's horizontal rotary oil burner is designated as model C. The term "rotary" describes the method of oil atomization employed, while "horizontal" indicates the position in which the burner is installed.

This unit employs the principle of continuous variable flame heat generation. As soon as the temperature drops below the setting of the thermostat, oil begins to flow in sufficient quantity to produce a flame which heats sufficiently to offset the prevailing heat loss.

Amount of Fuel Used

The range varies from no flow to 2 gals. per hour, depending upon the quantity of heat required. Kelvinator engineers claim that when this burner is in use, temperature fluctuations cannot be detected on an ordinary room thermometer, and that air stratification ("cold 70°") is eliminated.

Model C is of integral construction, functions independently of attachment to the heating plant, and consequently does not have to be built in, says Mr. Van Maanen.

Control system of this burner is of the hydraulic type, employing the expansion and contraction of liquids under heat and cold as the actuating force.

Offered in Various Capacities

Model G is the conventional intermittent burner made by Kelvinator, and embodies most of the usual features found on this type of unit. It is painted in blue, and all exposed parts are chromium-plated. Both burners are offered in a number of capacities.

Later this year, Kelvinator will have gas heating appliances of both the conversion—(installation in existing heating plants) and combination-unit type available, says the department manager.

G-E Given Medal for Industrial Research

SCHENECTADY, N. Y. — "For pioneering in industrial research," the General Electric Co. was presented recently with a gold medal by the American Institute of the City of New York. The institute includes among its objectives the recognition of scientific work which has influenced human affairs.

Council on Awards decided that establishment and maintenance by General Electric of its large laboratory for pure research, started in 1900, has been of lasting benefit to human progress and industry.

Exercises took place at the Museum of Natural History in New York City, where a dinner was served, followed by presentation of the medal by Dr. H. H. Sheldon, president of the institute.

The medal was accepted by Dr. William D. Coolidge, director of the G-E laboratory. An hour's program of laboratory demonstrations was then given by scientists of the laboratory staff.

Seabury Will Represent Jas. P. Marsh Corp.

CHICAGO—Richmond Seabury of Wellesley Hills, Mass., has been appointed sales representative for the Jas. P. Marsh Corp. of this city, manufacturer of gauges, industrial instruments, valves, etc. Mr. Seabury's headquarters will be at 1 Orchard St. in Wellesley.

Krich Will Distribute Westinghouse Washers

NEWARK—Krich Distributing Co. has been appointed distributor for the complete Westinghouse home laundry equipment line which includes the washer line and the new automatic ironer.

EXTRA DRY



in Virginia Smelting Company refrigerants . . .

—just the old, reliable, time-tested favorites you can depend upon!

ESOTO—Liquid Sulphur Dioxide (refrigeration grade)—pure . . . clean free from moisture and acid—easy to handle—the always-reliable refrigerant for small refrigeration machines.

V-METH-L—Virginia Methyl Chloride, a refrigerant that is efficient and economical for Ice Cream Cabinets, etc.—pure . . . safe . . . reliable.

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Send me the literature I have checked. I am interested in receiving any additional literature on Electrical Refrigeration you may issue from time to time.
Folder: Extra Dry ESOTO (Liquid Sulphur Dioxide)
Folder: V-METH-L (Virginia Methyl Chloride)
Folder: Transferring from large to small cylinders
Circular: Physical properties of various refrigerants
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Manufacturers of "Genuine Detroit" Automatic and Thermostatic Expansion Valves, American Cubemakers, American Refrigeration Sections, Automatic Controls for Temperature and Pressure, Electric Valves for Refrigerant and Water Control, Thermostats, Humidistats and complete controls for Air Conditioning.

Descriptive literature gladly sent upon request

Division of
AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

AIR CONDITIONING

Temperature & Humidity Control Must Be Coordinated to Insure Perfect Comfort, Carrier Says

(Continued from Page 1, Column 2) in the next issue of ELECTRIC REFRIGERATION NEWS.

At the outset of his talk, Mr. Carrier recalled some of the early attempts at air conditioning, and showed what progress has been made in the past 15 or 20 years. He then turned to a discussion of climate.

"Climate has exerted a dominant influence upon the destinies and advancement of the races. Those residing in the temperate areas of the earth have advanced, while those whom time and circumstance have placed in the jungles of the tropics or in arctic wastes have faced a constant struggle for their very existence and have had little time or energy for scientific or artistic progress," he pointed out.

What Is Climate?

"What is climate?" he queried. "Can we analyze it into the elements that make it invigorating or depressing, delightful or uncomfortable, healthful or unhealthy?"

"Extensive researches have been made at the laboratory of the American Society of Heating and Ventilating Engineers, at Harvard University, at the University of Cincinnati, and elsewhere upon the important climatic elements affecting our physical comfort. It is found to resolve itself into temperature, humidity, air motion, and air cleanliness. All of these can be reproduced artificially," he stated.

Mr. Carrier then showed how large sums are spent annually in travel and residence in the mountains and at the seashore, largely for the freely admitted purpose of a change of climate, to escape from the heat, dust, humidity, and noise of the city to the cooler, cleaner, and less humid climate of the mountain and seaside resort.

"Such investments in improvement in climate have been taken as a matter of course, and it seems almost a certainty that in the future people will make investments to enjoy improved climates in their homes and offices as well," he predicted.

Relation of Climate and Civilization

Prof. Ellsworth Huntington of Yale has written a book on the relation of climate to civilization, in which he concludes that a fairly high degree of moisture in the air is most favorable—I might add when not accompanied by excessive heat, Mr. Carrier said.

"He finds that in the dry interior of the United States, a relative humidity of less than 30% increases the death rate by at least 10% above that which prevails when the relative humidity is 70% or higher. He points out that in winter, when we heat the outdoor air from about the freezing point to about 70° F., we produce an indoor climate as dry as that of the driest part of the continental interior. Such dryness there in summer causes an increase of at least 10% in the death rate, as shown by his climographic tables and charts.

"Apart from its effect upon health, humidity, according to Huntington, exerts an appreciable influence upon the working capacity of men. For the same temperature, he finds that neither the dry nor the wet days are favorable to the performance of physical labor, but that the best results are obtained with an indoor relative humidity of about 60% at temperatures between 65° and 70° F.

Air Movement

"Air movement also plays an important role in ventilation, not only because it blows away the warm and humid aerial blanket which surrounds the body, but also because it exerts a pleasant and stimulating effect upon the skin, a sensation which is lacking in still air," Mr. Carrier stated.

"While air conditioning as a means of producing climatic conditions suitable for human comfort has only recently received full public acceptance, the art itself substantially as practiced today has been under development for nearly a third of a century," he continued.

"Over a year ago, when I was called in to install a million dollar air-conditioning system for the studios of Radio City, I realized what strides had been made in this art since a summer 32 years ago when I worked on the first problem in air conditioning, that of humidifying and dehumidifying a lithographic plant in Brooklyn.

"I tried cooling coils and calcium chloride in laboratory experiments with the principal final result which, although giving a great deal of fundamental data with reference to moisture in the air and its general

perverseness, resulted tangibly only in utterly ruining two pairs of expensive shoes worn by my two assistants just out of college.

"In 1906, however, four years later, the first real air-conditioning installations were installed based on practically the same principles of equipment and operation but of less refinement than is used today," according to the speaker.

Aside from being a source of life-giving oxygen, the air in which we and all of the objects on the surface of our earth are bathed, serves a very important function as a carrier of heat and moisture to or away from our bodies and other objects, the speaker showed. "From a standpoint of human comfort and in relation to many materials, we are interested in the following states or conditions of the atmosphere; the temperature, the humidity or the amount of moisture which exists in the atmosphere as vapor, and finally the movement of the air and its purity.

Physical Comfort

"To the average person, physical comfort is thought of or expressed entirely in terms of temperature. We are all familiar with the rather hackneyed phrase, 'It isn't the heat, it's the humidity.' Few understand just how much of fact there is in this common expression.

"You will realize its true importance, however, if you will recall a day when the thermometer registered 75 or 80° F., which isn't really hot, and yet you felt smothered and oppressed. You called it 'close' and 'muggy' and the 'weather man' probably said the humidity was excessive.

"That's exactly what was the matter! When the quantity of moisture in the air is too great the perspiration does not readily evaporate from the body and that sticky oppressed feeling is the result."

Effect on Humans

Mr. Carrier then gave some facts based upon experiments made in actual practice by the A.S.H.V.E.

"The human body experiences exactly the same feeling at the following temperatures and conditions of relative humidity: 95° F. of temperature with 10% relative humidity, and 75° F. with 100% relative humidity.

"This means that at 95° F., when the air is but 10% saturated it seems no warmer to one's body than when the air is at 75° F. (20° cooler) but saturated, that is, in a muggy condition.

"The reverse of this condition usually prevails in heated buildings during the winter. It is common to note a room temperature of 75 or 80° F. and at that temperature to have a sense of chill accompanied by dry, parched membranes of the nose and throat.

"This is due to the fact that the cold outdoor air brought into the building and heated contains but a small amount of water vapor. The result is an excessive evaporation from the body and from the membranes, accompanied by the chilling effect," Mr. Carrier said.

Importance of Humidity

Consequently, he showed, the humidity of the air is even more important to physical comfort than the temperature, and it is entirely possible for the thermometer to misrepresent the true condition of comfort. It is simultaneous control of both temperature and humidity that is selling air conditioning to the public, he believes.

"English visitors say that our homes are overheated and stuffy. This is due to the fact that the air in our houses in winter is too dry and since the cooling of the body is brought about by evaporation as well as radiation, we must overheat our houses and offices in order to approach comfort.

"This overheating causes stratification so that our heads are too hot and our feet too cool. The dryness of the air produces dust and the electrification of the dust particles which holds them in suspension."

We need to vacuum clean our air as much as we do to vacuum clean our rugs, he remarked. "It seems quite probable that most of our winter colds are due to improper heating methods, including lack of humidification.

Causes of Diseases

"Physicians trace many diseases to the weakening of vitality by the cumulative effect of these winter colds. They are the 'little foxes that spoil the vines.' Thus, lack of proper

air conditioning in our homes and offices certainly reduces the longevity of man," he declared.

As another instance when the thermometer proves deceptive with regard to physical comfort, Mr. Carrier cited a temperature of 60° F. on a sunny March day but a strong wind is blowing.

"You have called it 'raw' and 'penetrating,'" he said, "yet the air is not cold. The effect of air moving at a high velocity over the body is to produce excessive evaporation and to remove heat so rapidly from the body that a sense of chilling results.

"In this effect lies the danger of direct exposure to the blast of an electric fan or to current of air introduced into a room at high velocities," he pointed out.

So, he regards as another important consideration in creating ideal conditions of comfort, the method of pouring the air into the space so that it will reach every corner and yet will not create drafts. At this point he showed slides of the Carrier pan outlet and of the high velocity "Blue

Ribbon" outlet.

"Some of the most important advances have been improvements in the method of air distribution of cool air for ventilation without the production of objectionable drafts," he declared.

"One of the earliest methods was utilized first in an industrial process and afterwards adapted to the air conditioning of theaters. In such a system of distribution, the cool air is introduced overhead, as it preferably should be, and distributed as a uniform blanket to settle down gradually, pleasantly, and uniformly.

"A similar method of introduction, but with a different type of outlet, is accomplished in the Senate and House of Representatives at the Capitol at Washington," he explained, showing slides of these installations.

Now the new Senate office building and the new office building of the House of Representatives are equipped, or being equipped, completely throughout with air conditioning, he reported.

This is true of numerous other

government buildings, such as the U. S. Department of Labor and Interstate Commerce Commission building which employs 1,800 tons of refrigeration (cooling capacity of 75 tons of ice per hour).

"One of the latest improvements in the introduction of cool air is the Blue Ribbon outlet," he averred. "This is applied to the side walls of the room in place of the usual type of register outlet.

"The trouble with the old type of register outlet was that the cold air introduced would not mix with the air of the room and due to its greater weight fell down and caused very objectionable drafts. The new type of outlet, which we have termed the Blue Ribbon outlet, is essentially a high velocity outlet employing a series of longitudinal slots."

Here he showed a slide of the outlet and explained that the air is discharged from the narrow nozzles at about 2,000 ft. per minute, a velocity higher than in any other part of the ventilating system.

(Concluded on Page 20, Column 1)



Carrier

A Complete Line of COMMERCIAL REFRIGERATION and AIR CONDITIONING EQUIPMENT that offers Unusual Opportunity to Progressive Dealers

Consider what Carrier's 19 years of Leadership in Air Conditioning means to you



COMMERCIAL REFRIGERATION

A complete line of small commercial refrigerating machines (Methyl, Freon, Ammonia) from 1/2 to 10 h.p. for product cooling and comfort air conditioning of all kinds.



STORE WEATHERMAKERS

This is the popular 39D Suspended type, Carrier Store Weathermaker—capacity 1 1/2 tons. It is part of Carrier's comprehensive line of commercial air conditioning equipment.



ROOM WEATHERMAKERS

Carrier's suspended and floor mounted air conditioning units from 1 1/4 to 18 tons refrigerating effect, meet the requirements of small and medium sized stores of all kinds. Illustration above shows floor mounted Store Weathermaker Unit.



COLD DIFFUSERS

Handsome, compact units for individual offices, rooms and small shops. Illustration shows cabinet type Room Weathermaker. Self-contained units, with refrigerating machine and cooling coil in single casing are also available.



COLD DIFFUSERS

Four types of Cold Diffusing Units—3 to 7 sizes for each type—comprise this broad line of Carrier equipment suitable for a wide variety of applications. Illustration is of the 1400 series unit, suspended type.



Carrier WEATHERMAKERS TO THE WORLD

THOUSANDS of installations in stores, restaurants, offices, public buildings, homes and industrial plants have earned for Carrier its unique place of leadership in the air conditioning industry.

The Carrier organization, as the result of 19 years varied experience in air conditioning, knows how to apply correct principles and methods to installations that will give results at economical cost. Its complete line of equipment—suitable for the smallest room or the largest building—provides the means of meeting any air conditioning problem.

Carrier dealers have the benefit of this experience and the prestige of the entire Carrier organization in the field of air conditioning, refrigeration and industrial heating. A few territories for dealer franchises are open to experienced and financially reliable organizations. Our Merchandising Department will be glad to explain our plan of dealer representation. Write today giving full details.

Carrier Engineering Corporation
850 FRELINGHUYSEN AVE. NEWARK, NEW JERSEY

AIR CONDITIONING

Carrier Discusses Railroad Cooling

(Concluded from Page 19, Column 5)

"With properly shaped nozzles, this can be done without noise, produces good mixture and diffusion with the room air, and permits the ventilation of the space without cold drafts," he claimed.

"One of the important recent developments in air conditioning is the application to railroad trains. This is at present accomplished in three ways, Mr. Carrier said.

Three Systems Used

"First, by ice, which is being gradually abandoned in favor of mechanical systems.

"Second, where the refrigeration is supplied by means of mechanical compressors requiring about 7 hp. for operation, and electrically driven, the current being produced by generators directly driven from the axle of the car.

"In so far as the air conditioning and refrigeration is concerned, this is relatively simple. The difficulties lie in the design of a suitable mechanical or electric drive from the axle which, of course, is obliged to operate at greatly varying speeds.

"Third, by the steam ejector system, which was first introduced to air conditioning on railroad trains.

"Steam is taken at about 50 lbs. pressure directly from the steam heating line running through the entire train," the speaker stated. The steam consumption required is slightly less than is required for heating in winter."

How Steam Is Used

He explained that the steam is passed through an ejector which is capable of producing an exceedingly high vacuum causing water to boil at about 45° F. This cooled water is circulated through the coils of the air-conditioning equipment for cooling the train.

"Atmospheric condensers are employed on which the condensate from the condensers themselves are sprayed over the surface, thus greatly reducing the condenser temperature and making the system feasible to operate even at the higher temperatures such as are encountered by the Santa Fe through Arizona, where temperatures sometimes rise to 110° F. in the shade yet the condenser temperature never exceeds about 103° F.," he said.

Sales Double Every 4 Years

Sales of air-conditioning equipment have doubled in dollar volume about every four years, Mr. Carrier stated in displaying charts on growth of the industry. One chart depicted the growth from sales of one million dollars in 1916 to about ten million in 1929.

Power consumption, he predicted in conclusion, within the next 20 years will just about equal the total electrical power load of New York City.

New Orleans Comfort Chart Prepared By Utility

NEW ORLEANS—People living in the hot humid climate of this territory experience discomfort with dry-bulb depressions in excess of eight to ten degrees, it has been found by air-conditioning engineers of the New Orleans Public Service, Inc., so a new comfort chart has been prepared to guide designers and installers of air conditioners here.

The condition of maximum comfort in this region is 82° F., with a relative humidity of 45 to 50 per cent, according to G. E. May, air-conditioning engineer of the utility company. This is considerably higher than that accepted for national use, he points out. The New Orleans comfort chart is reproduced on this page.

"Being practically surrounded by water," Mr. May states, "New Orleans has a high absolute humidity

Installations in 1933			
Class of Business	No. of Installations	Refrig. Ton-	H. P. Consumption
Blue Printing	1	1	1½
Exhibits	4	4	6
Bank and Office Buildings	1	350	516
General and Private Offices	3	19	28
Brokers' Offices	1	6	10½
Stores (Small)	3	26	32½
Stores (Large)	2	490	742½*
Restaurants	1	100	103*
Residences	12	18½	27
Fruit Storage	1	2	3
Total during 1933	29	1016½	1470

*Includes electric equipment only on two steam ejector installations.

NOTE: The Shushan Airport air-conditioning equipment was contracted for during 1933 although the installation was not completed until the early days of 1934. This will be counted as 1934 business.

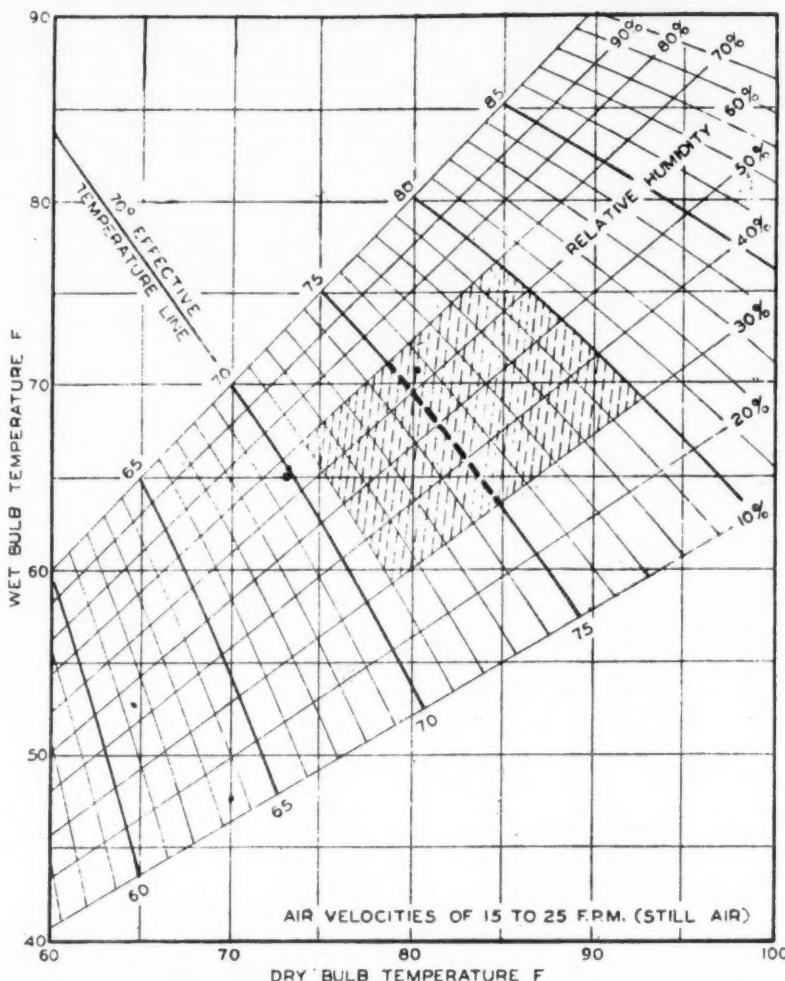
which remains fairly constant. There exists an almost constant ratio between dry-bulb temperature and relative humidity throughout the year.

"The temperature seldom rises above 95° F., with an average close to 90° F. Building construction is generally poor, with little or no insulation or weather stripping in use. In addition, the heat transfer of some building materials is found to be higher here than in drier climates."

Promotion of air conditioning by New Orleans Public Service, Inc., is confined to the activities of two departments, Mr. May explains. One is the commercial department, specializing only in residential applications; the other is the industrial and commercial service department, specializing in commercial and industrial applications.

The work consists chiefly in cooperating with local consulting engineers, architects, and air-conditioning dealers, furnishing them with sales assistance and engineering help in their respective fields to aid in proper

Comfort Chart for the South



Engineers of New Orleans Public Service find the higher temperatures of this comfort zone suitable to people living in hot, humid New Orleans.

estimates and installations.

Published on this page is (1) a tabulation of air-conditioning installations made in New Orleans prior to 1933, and (2) a table of installations made last year.

"The people of New Orleans appreciate the value of air conditioning," he claims. "Performance of pres-

Installations Before 1933			
Class of Business	No. of Installations	Refrig. Ton-	H. P. Consumption
Exhibit of Progress	1	3	4½
Candy Manufacturing	2	7½	12
Cake Manufacturing	1	1	1½
Pecan Drying	2	1	1½
Printing and Lithographing	1	1	2½
Stores	4	688	1174
Theatres	4	495	920
Private Offices	5	14½	22½
Studios	2	11	24½
Laboratory	1	1	1
Residences	3	6	7
Total Prior to 1933	26	1227	2168½

ent installations has contributed largely toward building up interest. Many installations have been made in the office and home, where comfort was the main objective.

"Air-conditioned stores and restaurants have been so well patronized that competitors are forced to give this service serious and immediate attention. The enthusiasm of owners and their patrons has served to stimulate the interest of old prospects and to develop many new ones. In time the market will be broadened, and air conditioning sales per capita here should easily equal that of any other city in the United States," he believes.

"The climate is well suited for air conditioning and the field of application is broadening faster than it is being developed. Of further significance is the fact that the trend of thought is toward year-round air conditioning, with all of its phases, rather than simply summer cooling," according to Mr. May.

Keyes Speaks on Flue Gas Sulphur Dioxide

NEW YORK CITY—Prof. Donald B. Keyes of the University of Illinois addressed the Society of Chemical Engineers recently on the subject "Co-operative Studies on Sulphur Dioxide Removal from Flue Gases." The occasion was a regular meeting of the American Section of this society, held at The Chemists' Club.

Dr. Keyes used the particular problem of sulphur dioxide recovery as an illustration of the investigations which have been carried out at the University of Illinois in cooperation with various industries.

The first method tried in the investigation described was to scrub the flue gases with a solution containing a catalyst. Taking advantage of the oxygen present in the flue gases, the sulphur dioxide obtained in the solution was oxidized to form sulfuric acid.

It was found, however, that this process had certain economic disadvantages. The method worked out, which is now in use, is to scrub the gases with a salt solution having a high solubility for the sulphur dioxide at low temperatures and a low solubility at higher temperatures. The sulphur dioxide is recovered as a liquid product.

Crosley Builds Portable Electric Heaters

CINCINNATI—The Crosley Temperator, a portable electrical heater, is a new product recently introduced by Crosley Radio Corp.

Equipped with a 1,000-watt coil, complete with cord, it retails at \$7.50. Equipped with 600-watt coil and without thermostat it is available at \$5.50.

Principal feature of the new unit is its ability to create a general circulation of warm air. This circulation is established by means of an electrical fan built into the unit and powered by an induction type motor. Thermostatic control is another feature.

The heater is housed in an insulated metal case. A heavy grill prevents contact with the heating elements.

Drill-Speeder Unit Is Built by Ex-Cell-O

DETROIT—Ex-Cell-O Aircraft & Tool Corp. has developed a special drill-speeder unit for horizontal boring and milling machines, radial drills, and similar machines. With this unit a higher range of speeds can be obtained for drilling small sizes of holes.

The ratio of the drill speeder is four to one over the spindle speed of the machine on which the unit is used. The maximum speed at which the machine spindle should be operated is 700 r.p.m. which gives a maximum drill speed of 2,800 r.p.m.

These units are also furnished with a No. 5 Morse taper drive, which enables the customer to provide suitable sleeves or adapters to fit their particular make and style of machine on which the unit is to be used.

Engineer Sees Danger In Undersize Equipment

EAST PITTSBURGH, Pa.—"Units that are too small to cool the space for which they are purchased, and similar misapplications may turn the public against air conditioning."

This warning was sounded by J. W. Speer, air-conditioning manager of Westinghouse Electric & Mfg. Co., to a group of the company's air-conditioning dealers gathered last week for a dealer school at headquarters here.

Air-conditioning dealers who skimp on capacity in order to offer a low bid on the apparatus may do the industry much harm by creating dissatisfied customers, said Mr. Speer.

"Prospective customers of air conditioners will do well to deal with reputable engineering firms and to insist upon an assurance that the equipment purchased will adequately cool the space specified," he said.

Other speakers discussed distribution, engineering, and production problems. The visiting dealers witnessed the manufacture of air conditioners and saw them demonstrated in a specially constructed room.

Phipps Heads Chapter Of N.A.P.R.E.

SAN BERNARDINO, Calif.—With the election of S. E. Phipps of the San Bernardino Ice Delivery Co. as president, Orange Belt chapter of the National Association of Practical Refrigeration Engineers has launched its 1934 activity.

Selections of officers was made at a business meeting held at the Pacific Fruit Express Co. plant in Colton, Cal.

August Byrn, instructor at Colton high school, is the new vice president. Other officers include Paul Kemp of San Bernardino, sergeant-at-arms, and A. B. Burbach of Colton, secretary. C. A. Wobser of Colton is a new member of the board of directors.

Smith to Manage G-E Gas Furnace Sales

NEW YORK CITY—H. B. Smith has been appointed in charge of gas furnace sales activities of the merchandising division of the air-conditioning department of the General Electric Co., with offices here.

Mr. Smith has had several years of experience in gas heating with the Consolidated Gas Co., New York, and with the Central Hudson Gas and Electric Co. of Poughkeepsie, N. Y.

Kold-Hold System Used In Ice Cream Truck

PITTSBURGH, Pa.—Kold-Hold refrigeration is used in a 325-gal. ice cream truck which was recently put into commission by Doerr Brothers ice cream company of this city.

The truck body is 72 in. long, 62 in. width, and 34 in. high. It is insulated with 7 in. of Dry-Zero blanket in the roof and 6 in. in the sides and floor.



SULPHUR DIOXIDE

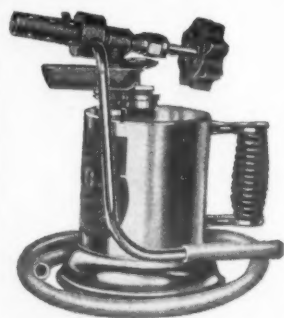
Manufactured under strict laboratory supervision. Absence of moisture and foreign materials made certain through analysis of every cylinder. Forty warehouses can supply you immediately. Write for prices and location of nearest source of supply.

METHYL CHLORIDE

A new product, backed by Ansul's wide reputation for producing dependable refrigerants. Low moisture and acid content are guaranteed by laboratory analysis of every cylinder. Write for full information and prices.

ANSUL CHEMICAL CO.
MARINETTE - WISCONSIN

ELIMINATE GUESSWORK WITH A TURNER HALIDE DETECTOR



It will positively locate the slightest leakage of any Chlorinated Hydrocarbon Refrigerant (including Aric, Methyl Chloride, Ethyl Chloride, F-12, F-114, Freon, Carrene, Methylene Chloride, Trichlore-ethylene and Dichlorodifluoromethane). Thousands of service men are finding it indispensable in making field tests. Easy to carry and operate. Used and endorsed by leading refrigerator manufacturers.

Send for Catalog R.N.-3 and price list.

THE TURNER BRASS WORKS, Sycamore, Illinois

Sanitary's 1934 Line Now Ready for Shipment

Beautifully styled cabinets with "Guest Room" extra food storage and ice freezing capacity.

5 Well-proportioned sizes that answer every household demand.

The reasonable suggested resale prices are as follows:

4.5 cubic foot	\$105.00
6.8 cubic foot	\$142.60
7.5 cubic foot	\$162.75
9.8 cubic foot	\$192.20
12. cubic foot	\$241.80

also a 4 cubic foot leader to sell at \$89.75.

DEALERS—Write for our franchise and exclusive territory agreement.

SALESMEN—Write for our line, it will make money for you.

Sanitary Electric Corporation

Fond du Lac, Wisconsin



Market Is Equipped With Forced Draft Display Case Units

PHILADELPHIA—Ridgway Refrigerator Co. of this city and the local branch of the York Ice Machinery Corp. have equipped the Blue Ribbon Beef Co.'s retail meat market at 43 S. 69th St. here with one of the largest installations of display case equipment refrigerated by a forced-draft system of cooling to be made in this territory.

Refrigerator equipment installed consists of three 12-ft. display cases, and a 9x12x10-ft. market cooler.

York equipment installed includes a set of York square-fin coils for each case, and a York 2-hp. compressor which provides refrigeration for the entire installation.

Forced draft cooling as employed in the Ridgway cases is described by Norman Cantrell, general manager of the Ridgway Co., as follows:

"In our cases the evaporator or cooling coil is placed at the bottom of the case and the temperature of the refrigerant in these coils is kept at about 26° F. to 28° F. The temperature of the air in the case is maintained at approximately 35° F.

"The small differential between the temperature of the refrigerant and the temperature of the air in the display case accounts for the small amount of dehydration of food.

"However, due to this slight differential in the refrigerant temperature and temperature of the inside air, natural draft circulation will not be set up. Thus it is necessary to keep the air in motion by means of a fan, motivated by a small motor."

The motor which operates the fan in the Ridgway display cases is located outside the case.

Westinghouse Progress In Lighting Traced

EAST PITTSBURGH—A 32-page illustrated publication, entitled "Westinghouse in the World of Lighting," has just been issued by the Westinghouse Electric & Mfg. Co. here.

Important developments in illumination are illustrated, some of which reached a climax with the lighting of a Century of Progress.

The Early Bird - - Catches a Water Cooler Sale Like This



Employees of the Oswego Falls Corp. won't want for a cooling drink next summer. This flock of Frigidaire water coolers sold to the company by Johnston's Hardware at Fulton, N. Y., will take care of their needs.

Kason Issues Advertising On Door Closer

BROOKLYN, N. Y.—A new mailing promotion piece featuring the Kason automatic door closer for walk-in coolers is now being distributed by the Kason Hardware Corp. of this city.

Cover of the folder is a letterhead with a letter explaining the purpose of the closer. Inner spread of the folder has a closeup of the closing device and a blue print.

Bataille to Manage Coil Sales on Rempe

CHICAGO—Gerald S. Bataille has joined the Rempe Fin Coil Co. here as director of sales on Rempe fin coils for commercial refrigeration.

Westinghouse Plan Given to Salesmen

NEW YORK CITY—The Westinghouse Owner's Club sales plan was presented to retail salesmen of Allen-Ingraham, Inc., metropolitan distributor for Westinghouse, at a recent

meeting.

To get the explanatory booklets into owners' hands quickly, they are being mailed out in batches of 1,500. The salesmen receive copies of the lists of those receiving booklets. If any owner is in a particular salesman's territory, this salesman makes a call on the owner to further explain the object of the club and to fill out the certificate.

Business Failures Are Declining

WASHINGTON, D. C.—Analysis of business failures in the United States made by Division Administrator A. D. Whiteside of the NRA shows a marked decline in commercial mortalities during the last six months of 1933 as compared with records of the same periods in 1932 and 1928.

Decline in failures was sharper among small business than in larger enterprises, according to Mr. Whiteside.

In the last six months of the year, the report discloses, the failure total was 6,805 lower than the total during the same period in 1932 and 3,420 below the total for the last half of 1928, a decline of 47% from 1932 and 31% from 1928.

"The year 1928," asserts Mr. Whiteside, "was one of good general business conditions and relatively low commercial mortality. For that reason it is significant that the failure totals of the last six months of 1933 were under those of the last six months of 1928."

The monthly comparative figures are:

	1933	1932	1928
July	1470	2543	1867
August	1530	3105	1862
September	1040	2054	1563
October	1244	2049	2201
November	1308	2440	1696
December	992	2198	1825

Another table shows that while the rate of decline in failures affected all industry from the very large to the very small the highest total declines occurred in two groups of smaller concerns having liabilities of less than \$25,000. Of the total decrease of 6,805 from the 1932 period, 5,325 or 78% was in those two groups.

Export of Refrigerators

December, 1933, Shipments Reported by the Bureau of Foreign and Domestic Commerce, Washington, D. C.

	Electric Household Refrigerators		Electric Commercial Refrigerators Up to 1 Ton		Parts for Electric Refrigerators	
	Number	Value	Number	Value	Number	Value
Austria	4	\$ 300	52	\$ 6,276	456	\$ 12,889
Belgium	62	5,625	6	1,718	80	3,808
Bulgaria	1	85	24	2,629	124	2,627
Czechoslovakia	12	508	12	2,781	10,541	33,524
Denmark	1	219	4	581	6	6
Finland	1	322	75	8,420	608	13,391
France	354	27,167	35	3,591	7,450	50
Germany	16	1,070	31	3,715	50	40
Greece	21	2,219	1	513	40	40
Iceland	4	322	3	396	1,830	1,809
Irish Free State	4	398	20	1,625	12,723	23,319
Italy	220	12,382	201	7,076	14,375	8
Netherlands	53	3,506	3	548	282	46
Norway	52	4,222	6	709	284	51
Poland and Danzig	3	231	1	513	1,368	561
Portugal	4	322	1	513	175	88
Rumania	20	1,677	3	396	1,830	1,809
Spain	56	2,905	20	1,625	12,723	23,319
Sweden	52	4,620	20	1,625	14,375	8
Switzerland	16	1,189	3	548	282	46
Albania	1	94	6	709	284	51
United Kingdom	538	26,883	58	9,520	23,319	82
Yugoslavia	10	1,471	201	7,076	14,375	8
Canada	374	12,135	4	229	16	16
Costa Rica	4	229	3	548	282	46
Guatemala	5	355	3	548	282	46
Honduras	7	911	3	548	282	46
Nicaragua	12	1,207	6	709	284	51
Panama	46	4,800	2	205	1,368	561
Salvador	23	2,050	2	205	1,368	561
Mexico	17	1,415	2	205	1,368	561
Newfoundland and Labrador	3	301	1	375	175	88
Bermudas	4	345	1	375	175	88
Barbados	3	301	1	375	175	88
Jamaica	4	345	1	375	175	88
Trinidad and Tobago	8	806	1	375	175	88
Other British West Indies	27	2,379	14	1,838	608	251
Cuba	42	3,394	2	205	1,368	561
Dominican Republic	16	1,408	2	205	1,368	561
Netherlands West Indies	23	2,060	2	205	1,368	561
French West Indies	4	423	2	205	1,368	561
Haiti, Republic of	6	598	16	1,959	16,947	12,470
Virgin Islands of U. S.	454	21,585	94	9,790	336	234
Argentina	897	74,264	9	2,760	14	14
Brazil	61	4,539	9	2,760	14	14
Chile	41	4,164	9	2,760	14	14
Colombia	13	710	9	2,760	14	14
Ecuador	17	1,265	9	2,760	14	14
British Guiana	9	829	9	2,760	14	14
Surinam	46	3,083	9	2,760	14	14
Peru	53	4,525	4	1,134	104	14
Uruguay	59	5,259	23	2,949	9,397	477
Venezuela	277	22,992	11	1,103	10,198	1,012
Aden	27	1,764	11	1,103	1,026	279
British India	39	3,996	1	223	2,305	3,984
British Malaya	27	1,447	8	2,834	3,984	589
Ceylon	74	5,967	1	477	589	10,198
China	7	289	5	1,103	1,026	279
Hong Kong	228	8,495	11	1,173	1,026	279
Japan	52	6,766	26	3,780	1,765	81
Kwantung	63	4,751	4	925	1,765	81
Palestine	210	14,267	10	2,615	209	5,617
Philippine Islands	4	186	11	819	125	33
Siam	1	198	12	1,339	125	33
Syria	3	75	11	819	125	33
Turkey	286	19,279	302	24,236	11,282	45
New Zealand	23	1,797	1	143	134	161
British East Africa	11	1,463	1	143	134	161
Union of South Africa	1,545	159,934	1	143	134	161
Other British South Africa	16	1,355	1	143	134	161
Gold Coast	7	841	1	143	134	161
Nigeria	23	1,749	1	143	134	161
Other British West Africa	50	3,989	1	143	134	161
Algeria and Tunisia	9	849	1	143	134	161
Madagascar	4	383	1	143	134	161
Other French Africa	29	2,639	1	143	134	161
Italian Africa	43	4,596	1	143	134	161
Morocco	1	93	1	143	134	161
Mozambique	204	22,994	1	143	134	161
Other Spanish Africa	76	5,864	1	143	134	161
Shipments to Puerto Rico	76	5,864	1	143	134	161

LOW OPERATING
COST IS FINE!
BUT HOW CAN
I BE CERTAIN
IT WILL
CONTINUE?

HERE'S WHY! THIS EQUIPMENT
IS INSULATED WITH ARMSTRONG'S
CORKBOARD!

Convincing arguments . . . these words!
Definite help for your salesmen

THE "show me" attitude is only natural for the man who's buying refrigerated equipment today! He's spending his dollars more carefully than ever before . . . and he demands full value.

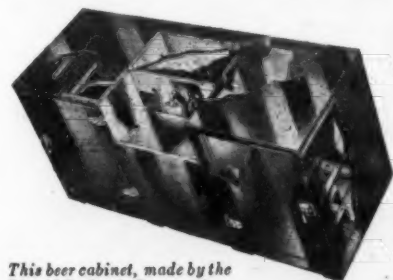
Your salesmen have important evidence of the continued economy . . . the long-lasting efficiency of your equipment when they can tell him: "It's insulated with corkboard!"

That's because your prospect

undoubtedly knows something about corkboard. He is familiar with its thirty-year record as standard insulation in the ice and cold storage industry. And he knows the name Armstrong stands for highest quality!

We'd like to tell you more about Type LK Corkboard for your cabinets! You'll be especially interested in its low coefficient of thermal conductivity—.269 B. t. u.—its light weight, rigid strength,

high resistance to moisture, and lasting efficiency. Let us send you complete data, and a sample for test. Armstrong Cork & Insulation Co., 917 Concord Street, Lancaster, Penna.



This beer cabinet, made by the Liquid Carbonic Corporation, of Chicago, is insulated with Armstrong's LK Corkboard, which assures that it will operate economically.

Armstrong's LK Corkboard Insulation

Efficient, Durable Insulation for Refrigerated Equipment

PATENTS

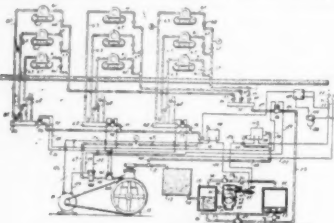
Issued Feb. 20, 1934

1,947,442. REFRIGERATED CABINET. Chester A. Baker, Omaha, Nebr., assignor to Baker Ice Machine Co., Inc., Omaha, Nebr., a corporation of Nebraska. Application April 19, 1930. Serial No. 445,615. 1 Claim. (Cl. 62-89.5.)

A refrigerator cabinet including an interior chamber and a vertical partition dividing the chamber into separate air cooling and storage compartments, an air duct leading continuously from the upper portion of the cooling compartment through the top, opposite end and bottom walls of the cabinet back to the lower portion of the cooling compartment, a refrigerating unit extending transversely through the cooling compartment between the ends of the duct, and a fan located in the cooling compartment below the refrigerating unit for drawing air from the duct and impelling the air through the refrigerating unit back into the duct.

1,947,574. REFRIGERATING APPARATUS. Edward T. Williams, Pelham Manor, N. Y. Application November 27, 1929. Serial No. 410,026. 37 Claims. (Cl. 62-115.)

1. A refrigerating system comprising a compressor, a condenser, evaporation means, conduits connecting said compres-

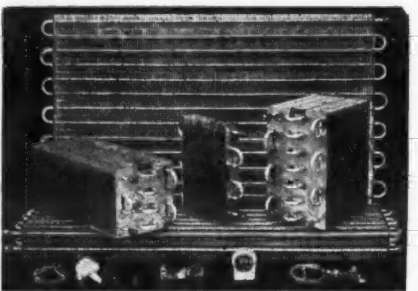


1,947,574

sor, condenser and evaporation means and automatic means for dividing said system into isolated sections operable upon the occurrence of abnormal change in pressure at any point in the system.

1,947,740. ICE SCORING MACHINE. Eugene O. Robinson, Hutchinson, Kans., assignor of one-half to T. Blakemore, Hutchinson, Kans. Application Dec. 22, 1932. Serial No. 648,489. 5 Claims. (Cl. 62-112.)

1,947,780. SINGLE EVAPORATOR FOR ABSORPTION MACHINES. Erich Kindermann, Berlin-Reinickendorf-West, Germany, assignor to Deutsche Gasglühlich-



REMPE SUPER COLD FIN COILS
COPPER ALUMINUM STEEL

DISTRICT REPRESENTATION
WANTED

WRITE
REMPE FIN COIL CO.
340 NO. SACRAMENTO BLVD.
CHICAGO

An Ideal Coil Service Set-up

KNOWING that you can get Coils quickly often speeds sales. LARKIN Original 100% Vertical Surface Aluminum Plate Coils can be supplied to practically every point East of the Rockies in from 12 to 24 hours. At our Atlanta, Brooklyn and Chicago Warehouses we maintain stocks of 124 Standard Models and Sizes.

WAREHOUSES
Brooklyn - Chicago

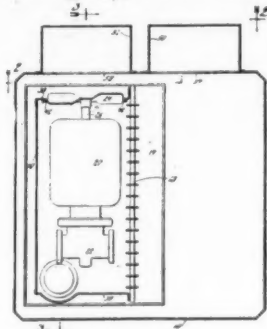
LARKIN COILS

Auer-Gesellschaft mit beschränkter Haftung, Berlin, Germany, a corporation of Germany. Application Aug. 28, 1930. Serial No. 478,496, and in Germany Sept. 3, 1929. 1 Claim. (Cl. 62-120.5.)

In apparatus of the class described, a plurality of evaporating vessels, and connections for the passage of fluid from one vessel to the next, each of said connections having its inlet at the lower portion of one vessel, and its outlet at the upper portion of the next vessel, the outlets of said connections being at approximately the same level with each other and with the outlet of the entire system formed by said vessels.

1,947,807. REFRIGERATOR CONSTRUCTION. Russell T. Smith, Greenville, Mich., assignor to Gibson Refrigerator Co., Greenville, Mich., a corporation of Mich. Application March 16, 1931. Serial No. 522,797. 4 Claims. (Cl. 62-116.)

1. In combination with a refrigerator cabinet having a motor-compressor-fan unit on the top wall thereof, a condenser also on the top wall of the cabinet and

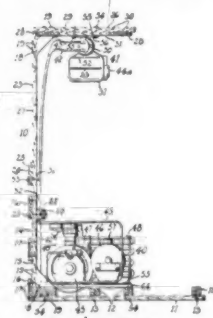


1,947,807

comprising pipes in a vertical row whose plane is substantially parallel to the axis of the fan and substantially perpendicular to the wall, a casing surrounding and covering the units and the condenser and having an air inlet on its rear wall and on that side of the condenser remote from the unit, and having an air outlet on its rear wall near the discharge path of the fan, a relatively long conduit for leading air to said inlet and a relatively short conduit for leading air from said outlet.

1,947,850. SHIPPING CASE AND SUPPORTING FRAME FOR REFRIGERATING APPARATUS. Edward Heitman and Arthur H. Sack, Detroit, Mich., assignors to Kelvinator Corp., Detroit, Mich., a corporation of Michigan. Application April 8, 1931. Serial No. 528,502. 3 Claims. (Cl. 217-36.)

1. A shipping case for refrigerating apparatus comprising a substantially rectangular box having removable side walls, a bottom wall adapted to support a re-



1,947,850

frigerant condensing unit and rigidly secured to an end wall, a top wall rigidly secured to the opposite end wall, said last mentioned end wall being adapted to support a refrigerant cooling unit and being detachably secured to the bottom wall, and means for rotatably securing the top wall to the first mentioned end wall whereby the end wall supporting the refrigerant cooling unit may be swung upwardly to a horizontal position.

1,948,155. REFRIGERATION MACHINE. Robert L. Alexander and James R. McCallum, Clinton, Iowa, assignors to The Climax Engineering Co., Clinton, Iowa, a corporation of Delaware. Application Sept. 26, 1930. Serial No. 484,538. 10 Claims. (Cl. 62-115.)

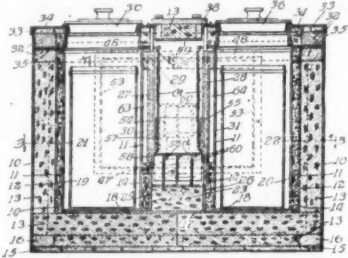
1. Refrigerating apparatus of the character described comprising a compressor, a sealed casing enclosing said compressor, a plurality of vertically disposed heat radiating fins extending laterally from said casing and a condenser connected to receive compressed refrigerant from said compressor and disposed above said casing and at least partially within a vertical projection of said fins in the path of rising convection air currents induced among said fins by heat from said casing.

1,948,156. AIR CONDITIONING UNIT. Carlyle M. Ashley, South Orange, and Vincent S. Day, Summit, N. J., assignors to Carrier Research Corp., Newark, N. J., a corporation of New Jersey. Application June 1, 1931. Serial No. 541,278. 5 Claims. (Cl. 126-116.)

1. An air conditioning apparatus comprising a casing, a first interchanger and a second interchanger in said casing, a firebox for supplying products of combustion to said interchangers in succession, a fan for discharging a volume of air into said casing, and means for diverting a small portion of said air volume in contact with said first interchanger and a larger portion in contact with said second interchanger.

1,948,275. REFRIGERATING APPARATUS. Benjamin Miller, Chicago, Ill. Application Jan. 6, 1933. Serial No. 650,404. 17 Claims. (Cl. 62-91.5.)

1. In a refrigerator the combination of a cooling compartment and a movable refrigerant carrier, the refrigerant carrier



1,948,275

being suspended in said compartment, an opening in a wall of the compartment, said opening being controlled by the movement of said carrier.

1,948,277. AIR CONDITIONER AND HUMIDIFIER. Raymond L. Payne and Glen E. Marica, Denver, Colo. Application July 25, 1932. Serial No. 624,410. 4 Claims. (Cl. 261-92.)

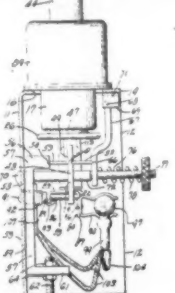
2. A spray forming device comprising, in combination a tank adapted to contain a liquid, a horizontal shaft mounted for rotation, a disk-like member secured to the shaft so as to be rotated thereby, a trough located in the tank below the shaft and in the plane of the disk, the upper edge of the trough extending above the normal liquid level in the tank, the lower edge of the disk extending into the trough to a point below the normal liquid level in the tank, and controlled means communicating the tank and the trough, for conducting water from the tank to the trough and terminating in proximity to the disk at a point between the periphery and the axis, so that upon rotation of the disk, the liquid in the trough will be converted into spray and its normal level will be lowered to a point slightly above the lower periphery of the disk and water will be delivered at a controlled rate against the disk at a point substantially above the lower edge thereof.

1,948,312. REFRIGERATED DISPLAY CASE. Arthur V. Phillips, London, Ont., Canada, assignor to Kelvinator Corp., Detroit, Mich., a corporation of Michigan. Application Oct. 2, 1930. Serial No. 485,956, and in Canada Dec. 24, 1930. 9 Claims. (Cl. 62-89.5.)

1. A refrigerated display case comprising a compartment to be refrigerated, a refrigerating compartment in open communication therewith, said refrigerating compartment having a removable top wall and a hinged side wall, a refrigerant evaporator disposed in said refrigerating compartment, and means for thermally isolating the refrigerated compartment comprising closing the opening between it and the refrigerating compartment with the aforesaid removable top wall.

1,948,339. CONTROLLER. Ralph W. Doeg, Detroit, Mich., assignor to Kelvinator Corp., Detroit, Mich., a corporation of Michigan. Application Nov. 25, 1929. Serial No. 409,531. 3 Claims. (Cl. 200-83.)

1. A controller comprising a bar having a pair of oppositely disposed notches formed therein, a pair of blades having



1,948,339

adjacent end portions pivotally supported in the notches, a bracket for rigidly supporting the opposite end of one of the blade members, a rod secured rigidly relative to the bracket and projecting through an opening formed transversely in the bar, a bracket for pivotally supporting the opposite end of the other blade, one end of said bracket being pivotally mounted in a frame and the other provided with an opening through which an outer end portion of the aforesaid rod projects, a spring surrounding the end of the rod beyond the pivotally mounted bracket and having one end abutting the latter, and adjustably mounted nut on the outer end of the rod engaging the opposite end of the spring, and means associated with one end of the bar for moving the latter longitudinally.

1,948,389. REFRIGERATING SYSTEM.

Emmett Maxwell, Reidsville, N. C., assignor of one-half to John Watt Womack, Reidsville, N. C. Application May 4, 1931. Serial No. 534,965. 4 Claims. (Cl. 62-46.)

1. A refrigerating system including a refrigerating chamber, closely spaced intersticed cold air circulating ducts receiving the chamber therein and being closed to the chamber and to the atmosphere, the duct arranged closest to the refrigerant chamber having ports in its walls adjacent to the closed top thereof, the next duct having a port at the bottom thereof to establish a communication with the outer duct, and the said closed duct and the outer duct having a tube connecting them at a high elevation for passage of the circulating air.

1,948,447. FUEL SUPPLY INDICATOR FOR REFRIGERATORS. Marc Resek, Cleveland Heights, Ohio, assignor to Perfection Stove Co., Cleveland, Ohio, a corporation of Ohio. Application July 20, 1932. Serial No. 623,562. 10 Claims. (Cl. 62-118.)

1. In an intermittent absorption refrigerator involving heating means requiring the supplying of the heating medium

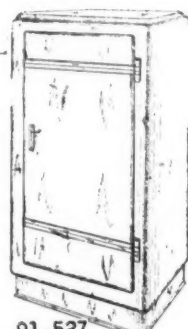


1,948,447

thereto at predetermined intervals of time according to a prescribed schedule, such intervals marking the beginnings of the cycles of operation; means subjected to and influenced by the condition of the cooling unit for indicating at the conclusion of one cycle the heating medium requirements of said heating means for the ensuing cycle.

DESIGN

91,527. DESIGN FOR A REFRIGERATOR CABINET OR SIMILAR ARTICLE. Ralph E. Kruck, Springfield, Mass., as-



91,527

signor to Westinghouse Electric & Mfg. Co., a corporation of Pennsylvania. Application Dec. 5, 1933. Serial No. 49,967. Term of patent 7 years.

The ornamental design for a refrigerator cabinet or similar article substantially as shown.

REISSUE

19,090. ABSORBER REFRIGERATING APPARATUS. Edward S. Halsey, North Miami, Fla. Original No. 1,779,211, dated Oct. 21, 1930. Serial No. 68,895, Nov. 13, 1925. Renewed March 20, 1930. Application for reissue Oct. 14, 1932. Serial No. 639,377. 16 Claims. (Cl. 62-119.5.)

15. The combination of an absorber refrigerating system and refrigerator cabinet cooled by said system wherein part of the structure of said cabinet is made of a dual walled vessel, the innermost wall of said vessel being exposed to the inside of the cabinet and functioning as an evaporator and cooler, with the opposite wall of said vessel being disposed on the outside of said cabinet and functioning as an air-cooled absorber.

Variable Electric Drive Described to Engineers

LOS ANGELES — Variable electric drives were explained to members of the Los Angeles section, American Society of Refrigerating Engineers, by Messrs. Hoffman and Heyer of the U. S. Electrical Mfg. Co. which makes the "Varidrive" motor.

Mr. Hoffman spoke first, introducing his subject briefly by pointing out how slip-ring motors have been commonly used heretofore to vary speeds of alternating current drives, whereas the new Varidrive varies the speed of the driving pulley by as little as 1 r.p.m. by mechanical means.

The units are being made in sizes up to 15 h.p., he said. Three separate controls had to be developed in conjunction with the devices, he reported; these were electrical, mechanical, and hydraulic.

To explain the drive, Mr. Hoffman introduced Mr. Heyer, its inventor. Mr. Heyer showed that the drive consists of two pulleys driven by a special V-belt, and a novel method of varying diameters of both the driving and driven pulleys to obtain the speed variation.

Diameter of the pulley on the power take-off shaft is varied by a hand-wheel, while the halves of the pulley on the motor are held together by a spring. This pulley changes its diameter in accordance with the pulley on the take-off shaft. As one increases, the other automatically decreases, and vice versa. A movement of 3° on the hand-wheel produces a speed change of 1 r.p.m. on the take-off shaft, he said.

A special hard chromium plate was developed to resist corrosion and wear on the driving surfaces, Mr. Heyer stated. Also a special lubricating bronze was developed, permitting a run of one year without lubrication. The entire unit contains four bearings, these of the ball bearing type.

For temperature control, a thermostat may be used in connection with a cyclic relay, the required change in speed being obtained by a small motor attached in place of the hand wheel. At the conclusion of the talk, two operating models of the Varidrive were demonstrated.

Baldor Has New Coupling For Electric Drives

ST. LOUIS—Baldor Electric Co. has just introduced a new "Flex-Align" coupling for driving equipment from electric motors. The coupling is made in three sizes, handling 1/2, 1, and 3 hp. A special rubberized fabric is used for the driving members, the metal parts being fastened together so as to avoid rattling.

Each part is held to the shaft with two set screws placed at 90 degrees, giving a three-point support.

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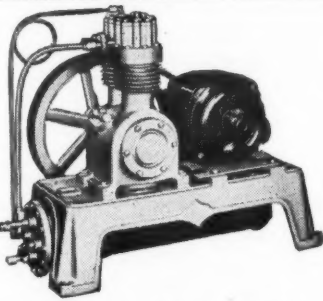
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Verdict Is Rendered On Tube Patent Suit

HARTFORD, Conn.—Federal Judge Edwin S. Thomas on Feb. 13 awarded a verdict to the Radio Corp. of America and associated companies in a suit charging Majestic Distributors, Inc., of Delaware, former factory branch of Grigsby-Grunow Co., with infringement of 25 claims on 11 patents for the manufacture of radio tubes.

Judge Thomas held that 10 of the 11 patents involved in the action were infringed and granted injunctive relief with respect to the 10. He also referred the case to a master for an accounting.

The articles in question were known as Majestic radio tubes, manufactured by the Grigsby-Grunow Co.

The particular tubes were the G-24, G-45, G-17-A, and G-80. Most of the patents related to improvements, but two or three were basic. They were Nicholson, Arnold, Wilson, and Van Ded Biji patents, owned by American Telephone & Telegraph Co., the Schottky and Selbst patents, owned by Radio Corp. of America, and two Langmuir and Mitchell patents, owned by the General Electric Co.

Only the Wilson patent was declared invalid and not infringed.

The Grigsby-Grunow Co. claimed that it held a personal release for its own infringing acts, but Judge Thomas held that this was no release to others who had infringed by selling the tubes in question.

Display Food Develops New Imitation Products

ST. PAUL—Display Food Co. here has introduced a new type imitation food, which is made of a special composition with a true base color.

Display Food Co.'s products are made for use in "open door" displays of electric refrigerators and other like applications.

The new reproductions are said to be easily cleaned and will not melt in the sun.

Merriam Heads Albany Bureau for 1934

ALBANY, N. Y. — A. Wayne Merriam, General Electric distributor here, has been reelected as president of the Electric Refrigeration Bureau of Albany for the year 1934.

Also reelected were W. H. McElroy, Frigidaire Sales Corp., vice president; G. W. Henzel, E. S. & E. Co. (Leonard distributor), treasurer; and Charles Levine, New York Power & Light Co., secretary.

Takes to Head Chicago Office of Corinco

CHICAGO—Will J. Takes has been appointed manager of the Chicago office of the Cork Insulation Co., with headquarters at 320 N. LaSalle St. here, officials of the company have announced.

CATALOGS

Emerson Motors

Official announcement of its new S-type split-phase motors is made by Emerson Electric Mfg. Co. of St. Louis in a four-page brochure which describes and pictures features of the units, gives their specifications in table form, and describes uses to which the motors are applicable.

Armco Stainless Steel

A neat little two-color folder for mailing or handout purposes has just been prepared by the American Rolling Mill Co. of Middletown, O., to promote sales of its Armco stainless steel. Twelve small drawings, accompanied by terse descriptive paragraphs, make up the content, and combine to answer the folder's caption, "What's good stainless steel supposed to do?"

Revere Products

Now available for the trade is a new schedule of list extras—sizes and prices of non-standard products—issued by Revere Copper & Brass, Inc. of New York City, covering seamless tubes and pipe and drawn shapes, in copper, brass, and bronze. The schedule became effective Dec. 11, 1933, and supersedes the company's list extras catalog of Jan. 1, 1933. A new schedule of base prices, effective Dec. 19, 1933, is also available now.

Hutchinson Cabinets

Complete line of display cases, ice cream cabinets, soda fountain equipment, household refrigerator cabinets, ice cube maker and commercial cabinets are presented in a new catalog just issued by A. Hutchinson & Co., Ltd. of 15 Hamilton St., Sydney, Australia. The manual gives illustrations,

descriptions, and key specifications of each product.

Kerotest Products

Presenting its complete line of forged brass valves, manifolds, and accessories, Kerotest Mfg. Co. of Pittsburgh is issuing a new catalog for the refrigeration industry. A second publication just issued is a special catalog of Kerotest fittings.

Enamelite

Presstite Engineering Co., St. Louis, recently mailed to prospects a multi-graphed four-page piece describing its Enamelite, which is an asphaltic mastic used in application of cork insulation to concrete brick walls and ceilings of cold storage rooms, and listing its various characteristics and features.

Wagner Motors

"Machine Tools" is the title of a new folder issued by Wagner Electric Corp., St. Louis, showing how the company's motors are adaptable for use with these devices. The folder is profusely illustrated with honing, milling, drilling, reaming, tapping, threading, grinding, and other machines operated by Wagner enclosed fan-cooled CP motors.

Marble-Card Motors

A new 23-page, well organized catalog has been issued by the Marble-Card Electric Co. of Gladstone, Mich. to present its line of motors. Each type of motor is described thoroughly, the text being accompanied by photographs to clarify the written material. Several pages are devoted to description of the company's generator line.

Carbondale Equipment

Issued recently by the Carbondale Machine Co. of Carbondale, Pa. are two new bulletins of interest to brewers. The first pertains to the new Carbondale system of liquefying CO₂ gas after it is reclaimed from the fermenters, either open or closed. The second explains the Carbondale system for collecting and storing CO₂ gas under pressure—suitable for breweries requiring recovery of only enough gas for carbonating and processing their own products.

Enduro Chromium Steel

Containing a considerable amount of factual information on Enduro 4-6% chromium steel, a new booklet has been published by the central alloy division of Republic Steel Corp. at Massillon, O. It first lists properties of the material, then describes uses to which the steel may be put and ways it responds to various kinds of handling processes.

Electric Furnaces

Prepared for users of iron and alloy steel castings and for foundrymen is a new booklet showing uses and features of the Detroit rocking electric furnace. It is issued by the Detroit Electric Furnace Co., and describes operation of the devices, their various applications, and estimates of costs for their use.

G-E Heating Units

With its sales message almost entirely in pictures, a pocket-size booklet has been published by General Electric Co. to show possible uses for its three Calrod heating units in industrial plants. Each page of the booklet represents a strip of movie film, with its short-captioned drawings showing how the units may be used.

Peerless Equipment

Peerless Electric Co. of Warren, Ohio is distributing a new catalog presenting its line of utility blowers, ventilating fans, forced draft equipment, and automatic controls for air-conditioning purposes. Capacities and price tables are given for each line of these products.

Metallic Packing

American Metallic-Packing Co. of Pittsburgh, Pa. has available a new 36-page catalog showing its various types of metallic packing for use with steam, air, gas, gaseous ammonia, and carbon dioxide equipment.

R. & H. Price List

A new list of prices, effective in January, 1934, has been issued by the R. & H. chemicals department of E. I. du Pont de Nemours & Co., Inc., in Wilmington, Del. The list covers all chemicals the company stocks for purchase by all industries.

Allen Hollow Screws

Allen Mfg. Co. of Hartford, Conn. has issued a pamphlet containing engineering data on its hollow set screws and socket head cap screws, showing the holding power and recommended sizes of the former, and recommended tightening forces of the latter.

Parks Certified Climate

Among the prospective buyers of air-conditioning equipment for industrial applications, the Parks-Cramer Co. of Fitchburg, Mass., is circulating a folder titled, "A guide for those who must outwit climate." It mentions the benefits of air conditioning, then presents a table listing a number of industries and their products, each followed by the process in which air conditioning is required in that particular

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field, then gives the temperature and relative humidity best suited to performance of that operation. With the folder is a loose leaf listing the various types of air conditioning equipment supplied by Parks.

Royal Liquor Faucets

A small folder has been issued by the Royal Brass Mfg. Co. of Cleveland, describing its new line of liquor faucets which supplements its earlier line of beer and bar faucets and fittings. The folder pictures the faucets, describes them, and gives their specifications.

Refrigeration Supplies

A thick new catalog has been issued by the Utilities Engineering Sales Co. of Chicago, listing the electric refrigeration accessories, tools, parts, and supplies the company carries.

Harry Alter Supplies

Issued by the newly organized Harry Alter Supply Co. in Chicago is a new 64-page catalog containing information on the electric refrigeration and radio supplies and electrical appliances which the wholesale company handles.

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